ISSUES IN ANTITRUST ECONOMICS

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This dissertation is dedicated to my parents, Mr. and Mrs. William S. Boylston, whose unconditional love and support gave me the strength to pursue and achieve my goals, and to Keith M. Herndon, who kept me sane.

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This dissertation is composed of three essays on antitrust economics. Each essay

deals with different antitrust concerns, addressing either a business practice that has

unjustly received antitrust condemnation or one whose antitrust violation has been

overlooked. Each essay contains a summary of relevant judicial decisions, an

economic analysis of the issues, and prescriptions for judicial decision making.

The first essay deals with tying and monopolization issues in high-technology,

durable goods industries. Specifically, the controversy that has arisen between

manufacturers and the independent servicers of those goods is examined. Although

there are numerous analyses in the economics literature that consider consumption of

a durable good to be the consumption of a flow of services over the life of the

durable, little has been done to unify these analyses with judicial decisions such as the

ones considered here.

The second essay deals with the <u>United Shoe Machinery</u> case, which is one of the most frequently cited decisions regarding monopolizing behavior. United Shoe Machinery received judicial condemnation in two major areas: (1) its policy of leasing rather than selling its machinery and (2) the specific provisions, both written and unwritten, contained within its leases. Microeconomic analysis of United's leasing practices reveals that they may have been procompetitive rather than anticompetitive. As a result, the judicial hostility toward these practices may be inconsistent with economic efficiency and the promotion of consumer welfare, which arguably are the goals of antitrust.

The last essay deals with monopsony in the medical insurance market. Various medical insurers have been charged with anticompetitive practices such as bans on balance billing and most-favored-nation clauses. Generally, the insurers have not been found guilty. This essay demonstrates that many of these insurers may have had monopsony power, a factor the judiciary did not consider, which they employed for anticompetitive purposes.

INTRODUCTION

Antitrust economics is at the interface of antitrust law and microeconomic theory. It is a field of study that pertains not only to economists and attorneys, but also to the numerous parties that serve as defendants and plaintiffs in antitrust litigation. The decisions made by the judiciary not only affect large and small firms, but they also affect consumers. The following essays contain analyses in three different, albeit related, areas of antitrust economics. Each essay deals with recurrent issues in antitrust economics, many of which are overlapping in nature, yet each is self-contained. Each essay examines judicial decisions in antitrust cases that conflict with what economic analysis would predict should be the outcome. After subjecting relevant judicial decisions to microeconomic analysis, economic tests will be proposed that distinguish anticompetitive from procompetitive business practices. Throughout, the goal is to provide a sound analytical foundation for antitrust policy.

The first essay examines tying and monopolization claims that have been brought against manufacturers of high-technology, durable goods by independent servicers of those goods. In some instances, the manufacturers have been charged with monopolizing the maintenance and repair services market in violation of Section 2 of the Sherman Act. In other cases, they have been charged with illegally tying maintenance and repair services to the purchase or lease of the durable. While the economics literature has analyzed durable goods as providing consumers with a flow

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of services over the lifetime of the durable, such analyses have not been adequately incorporated into judicial analyses.

This analysis begins with a summary of lower court cases that highlights the controversy between manufacturers and independent maintainers and the conflicting nature of the lower court decisions. This is followed by a presentation of the traditional standard of proof for a finding of illegal tying and/or illegal monopolization. Next, an economic model employing a life-cycle pricing strategy is used to analyze the markets characterized by competition and by monopoly for the initial placement of the durable. The model results in the finding that resource allocation is unaffected by the nature of competition in maintenance and repair services in addition to the following two conclusions: (1) the relevant locus of competition should be at the initial point of sale of the durable and (2) independent service organizations lack the grounds for a valid antitrust complaint. Finally, the analysis is applied to the Supreme Court's recent decision in <u>Eastman Kodak Co. v. Image Technical Services, Inc</u>.

The second essay deals with the <u>United Shoe Machinery</u> case, which has become a classic example of illegal monopolizing conduct. Specifically, United Shoe Machinery's leasing system was found to be anticompetitive. While several analyses of this ruling have been conducted, this analysis provides a detailed background of the United Shoe Machinery Corporation and examines each of the practices the court condemned, offering procompetitive justifications.

This analysis begins with evidence of the continued legal relevance of the United Shoe Machinery ruling followed by a summary of both United Shoe Machinery's policies and the court's ruling with an economic analysis of that ruling. The major areas under examination deal with United's lease-only policy on many of its machines in addition to specific lease provisions such as a long lease term, revenue-protection clauses, United's return policy, and the provision of repair and maintenance services without separate charge. In the examination of United's provision of "free" service, the life-cycle pricing model developed in the previous essay will be extended to include uncertainty. It will then be employed to demonstrate that the policy was not anticompetitive. Overall, it is shown that United's practices had many efficiency justifications that the court never considered and, therefore, that the case may have been decided incorrectly.

The last essay involves allegations that have been brought against various medical insurers, such as bans on balance billing and most-favored-nation clauses. In general, the insurers have prevailed. This analysis examines the issues from the perspective that many of these insurers may have had monopsony power (purchasing power). Monopsony is a relatively newly explored topic in the field of antitrust, and comparatively few applications of this market structure have been made. The implications of this market structure for antitrust analysis and enforcement have been largely neglected.

This study begins with a model that carefully demonstrates the welfare loss due to monopsony. Next, a proposal for the integration of monopsony analysis into

judicial decision making is presented. Monopsony analysis is then applied to judicial decisions dealing with such practices as bans on balance billing and most-favored-nation clauses. The result of this analysis is twofold: (1) health insurers may indeed be behaving anticompetitively and (2) the trade-off of risk reduction and monopsony power is unnecessary. Finally, deficiencies in the current guidelines for antitrust enforcement in the health care area are highlighted.

LIFE-CYCLE PRICING APPLIED TO HIGH-TECHNOLOGY, DURABLE GOODS INDUSTRIES

Introduction

In recent years, litigation has arisen concerning allegations of both monopolization of post-purchase maintenance and repair services of a durable good in violation of Section 2 of the Sherman Act and illegal tying of post-purchase maintenance and repair services to the initial sale of the durable in violation of Section 1 of the Sherman Act or Section 3 of the Clayton Act. In general, the complaint is that the consumer of the durable good is "locked in" to the purchase of future maintenance and repair services for that brand of durable good. When the manufacturer insists on providing those services, plaintiffs allege that it is guilty of one or more of the aforementioned antitrust violations. The cases in which the validity of such allegations are examined would not be so interesting were it not for the wide discrepancy in the decisions reached by the various courts. Not only are the decisions inconsistent with one another, but many run counter to what economic analysis indicates.

The purpose of this paper is to conduct such an analysis, pointing out deficiencies in some of the judicial decisions made to date, as well as to make prescriptions for future decisions. Unlike the approach commonly taken by the judiciary, I advocate using a life-cycle perspective to review the cases. The life-cycle

approach considers relevant pricing/output decisions as occurring over the lifetime of the durable. For example, the employment of a life-cycle approach involves regarding the price/output decisions made for the initial sale of the durable and for subsequent maintenance and repair services as components to a single overall pricing decision, rather than as distinct and independent price/output decisions. I will begin with a description of the environment in which the allegations are contested. Next, a discussion of the requirements for a finding both of illegal tying and of illegal monopolization is followed by a review of cases in which these violations were alleged. I then conduct an economic analysis of the issues using the life-cycle approach, which is incorporated into a detailed examination of Eastman Kodak Co. v. Image Technical Services Inc.[1] The paper concludes with recommendations for procedure in future judicial determinations.

Review of Judicial Decisions

The Environment

Frequently, high-technology, durable good industries have provided the arena in which the antitrust violations are alleged. The computer, telephone equipment, and xerographic equipment industries provide examples.[2] In these industries, a durable

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[1]Eastman Kodak Company v. Image Technical Services, Inc., 112 S.Ct. 2072 (1992).

[2]See Datagate, Inc. v. Hewlett-Packard Co., 672 F. Supp. 1288 (N.D. Cal. 1987); HyPoint Technology, Inc. v. Hewlett-Packard Co., 684 F. Supp. 488 (N.D. Ohio 1988); Virtual Maintenance, Inc. v. Prime Computer, Inc., 957 F.2d 1318 (6th Cir. 1992); and Eastman Kodak Co. v. Image Technical Services, Inc., 112 S.Ct. 2072 (1992).

good is initially purchased that subsequently will need some type of maintenance and/or repair. For example, a computer is purchased at time zero and at some future date it will require maintenance or the replacement of a worn or broken part.

Originally, manufacturers in high-technology industries earned healthy profits from their initial sales, tolerating and even cooperating with independent maintenance and repair organizations in the servicing of their products. But, as profits from these initial sales fell, manufacturers identified maintenance and repair as a viable source of revenue and discontinued their cooperative efforts with the independent service organizations (hereafter referred to as ISOs).[3] As a result, these ISOs recently have brought action against the manufacturers.[4]

There are three parties to consider in the determination of these cases. The plaintiff naturally serves as one of these parties and is usually an ISO. The validity of the complaint must first be established, followed by an assessment of injury to

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[3]Although such a change in policy may give the appearance of anticompetitive behavior, such a conclusion is not necessarily well founded. One viable alternative is that the initial cooperation by the manufacturers occurred while they were building up their stocks of durables and stemmed from a lack of resources to provide sufficient maintenance and repair services. Once equilibrium stocks were reached, however, the manufacturers were able to devote attention to maintenance and repair services. In fact, it is possible that competition to place the durable initially actually made it necessary for manufacturers to focus on maintenance and repair services to remain competitive. This last point will be discussed more carefully in the economic analysis portion of the paper.

[4]See Ronald S. Katz, "Legal Issues Between Equipment Manufacturers and Maintainers of That Equipment," International Computer Law Adviser (June 1989): 16-19 for a more detailed historical review of this issue.

competition, not simply to the plaintiff.[5] The defendant serves as a second party and is usually a manufacturer of a durable good. Of course, it is necessary to determine whether said defendant has indeed committed an antitrust violation. The final party to consider is the consumer since the effect of the judicial decision on consumer welfare should also be taken into account.[6]

Among the cases that have been decided thus far, both plaintiffs and defendants have emerged victorious. An examination of the reasoning behind the decisions reveals that the definition of the relevant market, the measurement of market power, and the determination of the locus of competition are critical factors influencing the decisions. Through inspection of these factors, it is possible to see how the judiciary's analysis of each affects the outcome of a case.

The Tying Issue

Before reviewing actual cases, it is important to address the allegations of illegal tying arrangements since they play a key role in many of the cases. Frequently, an ISO alleges an illegal tying arrangement on the part of the manufacturer after losing the ability to successfully offer maintenance and repair services (often for a specific manufacturer's product). It is true that many

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[5]It was noted in Brown Shoe Co. v. United States, 370 U.S. 294 (1962): 320, that "the antitrust laws were enacted for the protection of competition not competitors."

[6]The chief goals of the antitrust laws have historically been (1) to induce firms to behave in accordance with economic efficiency and (2) to protect/promote consumer welfare. For a literature survey regarding the goals of antitrust policy, see E. Thomas Sullivan and Herbert Hovenkamp, Antitrust Law, Policy and Procedure (Charlottesville, VA: The Michie Company, 1989), 1-22.

manufacturers have a "lock-in" capability, occurring from the customers' needs for repair parts specific to a manufacturer's durable, that prevents an ISO from servicing their products. It is questionable, however, that the use of this capability constitutes an illegal tying arrangement. It is also important to note that every manufacturer with unique parts has the "lock-in" capability.

By definition, tying means that the sale of one good (the tying good) is conditioned on the sale of another good (the tied good). In order for tying to exist, there must be two separate products. The judiciary currently tends to use the analysis found in <u>Jefferson Parish</u>[7] when examining allegations of illegal tying. In that case, the Court emphasized that two distinguishable product markets with separate demands must exist. It is not entirely clear, however, that the initial good purchased (a computer, for example) and subsequent maintenance and repair of that good are two distinct products with separate demands. It seems highly likely that the two may in fact be part of one product/service. Consequently, there would only be a single demand. One could easily envision that the "good" desired by the consumer is the output/services provided by a computer. To have this good, the consumer must not only purchase a computer, but she must also invest in maintenance and repair to keep the computer functional. The economic analysis in the third section will show that the assumption of two distinct product markets cannot result in a conclusion of illegal tying since there exists a single demand. Under the assumption of nonmyopic consumers, the analysis shows that since consumers are concerned with the life-cycle

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[7]Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2 (1984).

price of the services provided by the durable, the manufacturer cannot act in an anticompetitive manner unless it possesses monopoly power in the market for the durable itself; in which case the nature of competition in maintenance and repair services will be shown to be irrelevant.

If the analysis is conducted under the assumption of two distinct product markets (as it has been in some cases), for the plaintiff to prove illegal tying, he must show (1) that the manufacturer conditions the sale of the durable on the agreement to also purchase maintenance and repair services, i.e., that there is in fact a tying arrangement, (2) that the defendant (the manufacturer, for example) has sufficient power in the tying good market to restrain competition in the tied good market, and (3) that a "not insubstantial" volume of commerce is affected.[8] It is apparent that in order for the plaintiff to satisfy these requirements, market definition and the resulting determination of market power play important roles. For example, is the relevant market for the "tied" product maintenance and repair for computers in general or maintenance and repair for a specific brand of computer? As was demonstrated in the <u>Alcoa</u> case, how a product market is defined has direct implications for the amount of market power a firm is determined to possess and hence, for the potential of that firm to monopolize said product market.[9]

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[8]Roger D. Blair and David L. Kaserman, <u>Antitrust Economics</u> (Homewood, IL: Richard D. Irwin, 1985), 399-401.

[9]See United States v. Aluminum Co. of America, in which three potential measurements of market share were given based upon alternative market definitions: thirty-three per cent, sixty-four per cent, and over ninety per cent. The Court stated, "That [ninety] percentage is enough to constitute a monopoly; it is doubtful whether

In combination with the product market definition, a finding of illegal tying is also affected by the relevant locus of competition, which is the point at which the judiciary needs to be concerned about anticompetitive injury occurring. For example, in the life-cycle approach pursued here, I contend that the relevant product market is defined to be durables of the same type with the relevant locus of competition occurring at the point of initial sales for the durable. Under the tying allegations, however, the plaintiffs generally maintain that the relevant product market is defined to be maintenance and repair services for a particular brand of durable with the relevant locus of competition occurring at the maintenance and repair services stage.

Monopolization

The other key allegation brought against manufacturers concerns monopolization. The plaintiff generally charges that the manufacturer is guilty of monopolizing the maintenance and repair services "market." What the judiciary tends to look for when examining such cases is the degree to which the firm in question has market power, which is the power to raise price above competitive levels and thereby increase its profits. Stated another way, market power is the ability of a firm to price above its costs and earn supracompetitive profits.

In order for the plaintiff to prove illegal monopolization, he must demonstrate

(1) the possession of monopoly power in the relevant market and
(2) the willful acquisition or maintenance of that power as distinguished

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sixty or sixty-four per cent would be enough; and certainly thirty-three per cent is not." 148 F.2d 416 (2d Cir. 1945): 424.

from growth or development as a consequence of a superior product, business acumen, or historical accident.[10,11]

This naturally requires a determination of what the relevant market is. In these cases, the dispute has been over the relevant product market definition rather than the relevant geographic market definition. Naturally, the plaintiffs argue for a restrictive market definition (e.g., maintenance and repair services for a particular brand), whereas the defendants argue for a broader market definition (e.g., maintenance and repair services for all brands). The narrower the market definition, the greater the market share the defendant will be found to have, and hence, the greater the likelihood that the offense of illegal monopolization will be found by the courts.[12]

The difficulty with the allegations made by the plaintiffs is that they contend maintenance and repair services of a particular brand to be a market. As stated previously, however, maintenance and repair services of one brand of durable may just be part of a larger market: the market for maintenance and repair services for all durables of the same type, or even the market for the services provided by the durable good. Both of these definitions broaden the market in which the manufacturer is

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[10]United States v. Grinnell Corp., 384 U.S. 563 (1966), 570-571.

[11]For a more comprehensive analysis of the standards of proof for a finding of illegal monopolization, see Phillip Areeda and Louis Kaplow, Antitrust Analysis, (Boston, MA: Little, Brown and Company, 1988), 562-585.

[12]Since price-cost analyses are difficult to conduct, courts tend to use a firm's market share as an indication of its market power. This emphasis on market share is unfortunate because it is not the only determinant of market power, and, as a result, the employment of market share alone may lead to incorrect conclusions concerning market power. See William Landes and Richard A. Posner, "Market Power in Antitrust Cases," Harvard Law Review 94 (March 1981): 937-996 concerning the shortcomings of the use of market share alone as a determinant of market power.

competing, making it less likely that injury to competition will be found. Hence, it is clear once again that the determination of the relevant market definition has a major effect on the outcome of the cases.[13]

Case Analysis

The plaintiffs in the cases that follow must show that some type of antitrust violation does exist. From the above discussions on tying and monopolization, it is clear that the plaintiff must first identify the relevant product market. Once the relevant market has been defined, evidence of the defendant firm's market power and/or harm to competition must be presented. Since the determination of the relevant product market affects the determination of both market power and the relevant locus of competition, differences in product market definitions will result in various and conflicting judicial outcomes as demonstrated by the following cases.

Datagate, Inc. v. Hewlett-Packard Company. Datagate, an ISO of Hewlett-Packard computer hardware, alleged that Hewlett-Packard monopolized a market defined as the "service and repair of HP minicomputer systems."[14] Hewlett-Packard, a manufacturer of computer hardware products, challenged Datagate's market definition, asserting that it was too restrictive. There is, however, no indication in the case of what Hewlett-Packard considered to be the relevant market,

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[13]The previous discussion regarding the relevant locus of competition also applies here since this determination indicates where the judiciary should be concerned with monopolization occurring, i.e., at the point of initial purchase or at the maintenance and repair services stage.

[14]Datagate, Inc. v. Hewlett-Packard Co., 672 F. Supp. 1288 (N.D. Cal. 1987): 1290.

other than that it should not be limited to maintenance and repair services of a particular brand of durable. The district court, believing the level of complexity involved in determining the correct market definition to be high, could not "find that the parties present no genuine issue of material fact concerning the definition of the relevant market."[15] As a result, Hewlett-Packard was denied summary judgment on the issue concerning the relevant product market definition.[16] This case provides just one example of the disagreement that occurs over the relevant market definition.

A second issue addressed in this case was whether any injury to competition occurred. The court recognized injury to competition as harm to consumers rather than to specific competitors. An increase in price, a decrease in quantity, or a decrease in the level of quality may be indicative of such harm.[17] Indeed, the court noted that it could not "infer injury to competition solely from certain competitors' loss of customers."[18,19] Notice that this statement assumes that the relevant locus of competition is at the maintenance stage rather than at the point of initial purchase.

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[15]Ibid., 1291.

[16]Rule 56(c) of the Federal Rules of Civil Procedure allows for the use of summary judgment where no "genuine issue as to any material fact" exists. See Federal Civil Judicial Procedure and Rules, (St. Paul, MN: West Publishing Co., 1991), 166. When summary judgment is denied, the issue must proceed to trial.

[17]Aspen Skiing Co. v. Aspen Highland Skiing, 472 U.S. 585 (1985): 605-611.

[18]Datagate, 672 F. Supp. 1288 (N.D. Cal. 1987), 1291.

[19]The court's recognition that harm to the plaintiff alone does not constitute harm to the competitive process is important. Without such an understanding, no useful examination of market competition can be conducted.

The plaintiff failed to offer sufficient evidence of injury to competition, and therefore the district court granted Hewlett-Packard a summary judgment on this issue.

Datagate, however, did offer an alternative argument for an injury to competition on the part of Hewlett-Packard known as the "chilling effect." This claim relies heavily on Donald F. Blumberg's declaration in which he states that Hewlett-Packard's "'ISO Policy' has chilled potential entrants because they believe that [they] would be unable to obtain the parts and training necessary to service H-P systems."[20] Blumberg also contends that Hewlett-Packard controlled at least 95% of the relevant market. The district court felt Datagate presented sufficient evidence to deny Hewlett-Packard's request for summary judgment. It is clear that Blumberg's assertion supports the view that maintenance and repair services of Hewlett-Packard systems constitute a separate and distinct product market since his concern lies with potential entrants into that field.

Virtual Maintenance, Inc. v. Prime Computer, Inc. While the relevant market was not specified in Datagate, the analysis found in the ruling of the Virtual opinion[21] favors a less restrictive market definition than that stated by Datagate. The defendant, Prime Computer, is a manufacturer of computer systems, including the Prime 50 Series minicomputer, for which Prime provides maintenance services. Prime also supplies Computer Aided Design/Computer Aided Manufacturing systems

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[20]Datagate, 672 F. Supp. 1288 (1987): 1293.

[21]Virtual Maintenance, Inc. v. Prime Computer, Inc., 957 F.2d 1318 (6th Cir. 1992).

(CAD/CAM) to firms along with software support for those systems. In addition, Prime distributes and offers software support for PDGS, a software program designed by Ford Motor Company. Virtual was an ISO of computer systems. When Virtual attempted to offer service on the Prime 50 Series minicomputers, it was unsuccessful due to the fact that Prime packaged its PDGS software support with hardware maintenance of the Prime 50 Series. Virtual brought action against Prime, alleging an illegal tying arrangement.

The jury found for Virtual, and Prime appealed. The appellate court did state that "a tying arrangement clearly exists" and that "two separate products or services, software support and hardware maintenance, are involved in this case due to the evidence of separate consumer demand for each product."[22] But, it did not find the tie to be an illegal one. Although this tying arrangement is not that of maintenance and repair services to the initial sale of the durable specifically, the appellate court's analysis of this case provides interesting viewpoints on the relevant product market, market share, and the relevant locus of competition.

In addressing the issue of product market definition, the appellate court stated,

> Nor can Virtual limit the definition of the tied product market to hardware maintenance of Prime 50 Series computers simply because it desires to service only Prime's systems. Markets are defined by ease of supply and demand substitution not by one competitor's business preferences.[23]

[22]Ibid., 1323.

[23]Ibid., 1330.

The appellate court identified the relevant tied product market to be computer hardware maintenance generally.

The two potential tying product markets identified by the district court were "(1) the sale of software revisions and support for the CAD/CAM industry in general, or (2) the sale of software revisions and support for software necessary to do business with Ford Motor Company."[24] The appellate court found that Prime lacked market power under the first market definition and that the second market definition was too restrictive since it was limited to one particular brand.

As in Datagate, the court emphasized that the judiciary's concern lay with the impact on competition rather than on individual competitors, adding that, "courts therefore consistently reject market definitions limited to a single manufacturer's products because such markets do not reflect interbrand competition."[25] Despite its identification of two product markets, the court's analysis of this case implies that it believed the relevant locus of competition to be at the point of initial purchase of the product. In its decision, it indicated that what is relevant is the competitiveness of, and hence the defendant's market power in, the market for the initial good purchased, not for the tied good that the customer is "locked in" to consuming.[26] The court

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[24]Ibid., 1325.

[25]Ibid., 1326.

[26]The appellate court stated, "Defining the market by customer demand after the customer has chosen a single supplier fails to take into account that the supplier (here Prime) must compete with other similar suppliers to be designated the sole source in the first place." Ibid., 1328.

correctly reasoned that the consumer chooses among various options at the point of initial purchase, aware of any such lock-in features.[27]

As a result of the appellate court's analysis, the trial court's decision in favor of Virtual was reversed and judgment in favor of Prime was ordered. This case clearly demonstrates how an alternative definition of the relevant product market and locus of competition can change the outcome of a case. Although two product markets were identified, the appellate court leaned toward the employment of a life-cycle approach, which, with a broadened product market definition, resulted in the defendant rather than the plaintiff emerging victorious.[28]

HyPoint Technology, Inc. v. Hewlett-Packard Company. Hewlett-Packard, a manufacturer of computer hardware and software as well as a provider of maintenance and repair services, once again served as the defendant.[29] HyPoint classified itself as an ISO of Hewlett-Packard systems. When providing services, however, HyPoint employed neither its own equipment nor its own technicians. HyPoint operated by arranging for Hewlett-Packard to service customers "on a time

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[27]The appellate court, quoting Philip E. Areeda, Antitrust Law, Vol. 9, (Boston, MA: Little, Brown and Company, 1991), 102, "'It follows that we should measure the tying seller's power at the time that the tie-in agreement came into existence. At that time, the [plaintiff] has not yet invested the capital or effort that later makes him reluctant to abandon [defendant's product]. Indeed, at that time, the plaintiff presumably had many market alternatives.'" Virtual, 957 F.2d 1318 (1992): 1328.

[28]In light of its Kodak decision, the Supreme Court vacated the appellate court's decision in favor of Prime. Virtual Maintenance, Inc. v. Prime Computer, Inc., 113 S.Ct. 314 (1992).

[29]HyPoint Technology, Inc. v. Hewlett-Packard Company, 684 F. Supp. 488 (N.D. Ohio 1988), 869 F.2d 1491 (1989), 1990 WL 107523 (N.D. Ohio).

and materials basis." The appellate court reviewing the case noted that, "in point of fact, HyPoint is not a true 3PMF [ISO] in competition with H-P to provide service. Rather, HyPoint sells used H-P hardware and is an arbitrager/insurer providing H-P's customers with H-P's service."[30]

At one time, Hewlett-Packard provided a "premium response time service" that ensured a response within four hours of a service call. When Hewlett-Packard discontinued this service, HyPoint lost customers since it could no longer offer as quick a service response. Consequently, HyPoint brought action against Hewlett-Packard, claiming that Hewlett-Packard's action constituted monopolization in the market defined by HyPoint as "the maintenance and repair of H-P hardware systems."[31]

The district court ruling in the case granted a preliminary injunction, which meant that Hewlett-Packard had to continue offering the service. This decision was vacated and remanded upon appeal. A subsequent jury trial resulted in damages being awarded to HyPoint. The jury identified the relevant market to be

> limited to the repair and maintenance of Hewlett-Packard computer systems, separate and apart from (a) the repair and maintenance of computer systems generally, and (b) the sale and service of computer systems generally.[32]

The jury also found Hewlett-Packard to have market power in this very narrowly defined market.

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[30]HyPoint, 869 F.2d 1491 (1989) at footnote 1, p. 4.

[31]Ibid., 2.

[32]HyPoint, 1990 WL 107523, 1.

Given the appellate court's characterization of Hypoint as an arbitrager rather than an ISO, it is amazing that the case proceeded thus far and, moreover, that the finding was in favor of the plaintiff. In determining whether a preliminary injunction should be granted, the district court noted that one factor to be considered is "the likelihood of plaintiff's success on the merits."[33] Had the district court thought of HyPoint in the same manner as the appellate court did, it should have expected HyPoint to be unsuccessful since it was not a true ISO, drawing into question the legitimacy of the antitrust claim. Even if HyPoint had been a true ISO, had the market definition been less restrictive, it is very possible that the jury would have found Hewlett-Packard to not have sufficient market power and, therefore, to not be guilty of monopolization.

In its support of granting the injunction, the district court stated that, "unless a preliminary injunction is issued, HyPoint will suffer irreparable harm."[34] This argument runs counter to the reasoning found in both the <u>Datagate</u> and <u>Virtual</u> decisions in which concern lies with the competitive process in general rather than with the individual competitor. HyPoint did in fact lose clients. The clients, however, were not lost to Hewlett-Packard exclusively, but to other maintenance and repair service companies as well. It is also noted by the district court that "harm to others, particularly Hewlett-Packard and its clients, will be minimal, if any harm exist

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[33]HyPoint, 684 F. Supp. 488 (1988): 490.

[34]Ibid.

at all,"[35] which further demonstrates that the competitive process in general was not being harmed.

As in <u>Datagate</u>, this case supports a very restrictive market definition. Also, as in <u>Datagate</u>, the relevant locus of competition is at the maintenance and repair services stage as evidenced by the concern over HyPoint's welfare as a competitor in this "market." As previously stated, the greatest deviation from the preceding two cases and <u>HyPoint</u> is the court's concern with an individual competitor in the latter.

<div align="center">Economic Analysis</div>

The Model

The central concern in these antitrust cases has been that the manufacturer in question has monopolized the "market" for maintenance and repair services on its brand of equipment. This is made possible by the fact that the proper maintenance and repair of equipment requires patented parts under the manufacturer's control. Thus, the customer is "locked in" to using these parts and is at the manufacturer's mercy. Now, once a consumer buys a durable from a specific manufacturer, she may very well be locked in to obtaining maintenance and repair services from that manufacturer, but competition has not necessarily been harmed, and there may be no meaningful monopoly.

It is important to note before proceeding with the analysis that there do exist other types of contracts that a manufacturer could offer rather than locking in consumer purchases on maintenance and repair services. For example, the

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[35]Ibid.

manufacturer could offer free maintenance and charge a higher price initially. There are various reasons, however, why a manufacturer would rather employ the lock-in feature. The manufacturer naturally must be concerned with moral hazard if free maintenance were offered since the customers' incentives to take proper care of the durable is greatly reduced or even nonexistent. Furthermore, the consumer may be reluctant to pay a higher price for the durable initially if she is uncertain about the need for future maintenance and repair services. Additionally, many manufacturers may employ the lock-in feature in order to ensure that their reputation is preserved by maintaining a high level of quality.

In order to analyze fully the competitive effects of the lock-in features described, a life-cycle perspective is required. The first case that will be examined is that in which the manufacturer vies for placement of the durable good in a competitive market. A comparison will then be made to the situation in which the manufacturer has monopoly power in the initial sale of the durable good. The following three assumptions are made for the model that follows: (1) the durable is a homogeneous product with a life of T periods, (2) all firms (plants) are identical and consumers are identical with the result that all firms (plants) face the same cost of production, $C(Q)$, for the durable good and all consumers invest in maintenance and repair services in the same manner, and (3) both consumers and producers are assumed to have perfect information and foresight, i.e., they know what future maintenance and repair services will be required and at what price.

Competitive market structure

The buyer's decision. When the consumer purchases a durable (a computer, for example), it is not the physical good that she is interested in consuming. Rather, it is the flow of services that the durable provides over its lifetime that interests the consumer (e.g., wordprocessing services).[36] In present value terms, the consumer pays

$$R = P + \sum_{t=1}^{T} \frac{M_t}{(1+r)^t} \tag{1}$$

for wordprocessing services, where P is the initial purchase price paid for the durable, and the second term on the right-hand side of equation (1) is the present value of the future expenditures on maintenance and repair services, given that r is the discount rate.

Thus, the consumer's expenditure on the durable can be disaggregated into two components: the initial expenditure necessary to obtain the durable and the flow of maintenance and repair expenditures necessary to keep the durable producing the

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[36]See Peter L. Swan, "Durability of Consumption Goods," American Economic Review 60(5) (December 1970): 884-894; E. Sieper and Peter L. Swan, "Monopoly and Competition in the Market for Durable Goods," Review of Economic Studies 40(3) (July 1973): 333-351; and Teddy T. Su, "Durability of Consumption Goods Reconsidered," American Economic Review 65(1) (March 1975): 148-157 for analyses of durable goods in terms of the flow of services provided.

desired flow of services.[37] But the consumer is not particularly interested in the

price of each component. From the consumer's perspective, the charges for

maintenance and repair services matter only in how they affect the overall price paid

for the flow of services to be received. As noted by Su (1975), the consumer's goal

is to incur minimum expenditures in obtaining the services of the durable. In a world

of certainty and no opportunistic behavior by the seller, the buyer will be indifferent

about the individual prices of the components or the timing of the payments as long as

the sum is unaffected.[38]

    The seller's decision. Since the manufacturer is in a competitive market for

the initial sale of the durable, it will earn a competitive return. The manufacturer's

total earnings come from the initial sales of the durable good (Q) at price P plus

earnings from future maintenance and repair services. Assuming that the life of the

durable is T periods, revenues of P*Q are earned on the initial sales at time t = 0.

In future time periods, the present value of the stream of net revenues from

maintenance and repair services on each durable sold is given by

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[37]It is assumed that the durable in question can be characterized as being of the "one-hoss shay" variety. The services of the durable are of uniform quality for T periods. At the end of T periods, the durable vanishes.

[38]If the seller can behave opportunistically, then the buyer will be reluctant to pay for lifetime "free" maintenance and repair services in the initial purchase price since the seller could renege. In such cases, the buyer would want to have some type of contractual arrangement such as a warranty or guarantee. If the seller can behave opportunistically and contractual arrangements are not possible, then the consumer will be more concerned with the pricing structure.

$$\sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} \tag{2}$$

where M_t represents revenues from selling maintenance and repair services, m_t represents the cost of providing maintenance and repair services, and r is again the discount rate. As a result, the overall profit earned by the manufacturer is

$$\Pi = P * Q + Q * \sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} - C(Q) \tag{3}$$

where $C(Q)$ represents the costs of producing the durable good.

Given that the industry is competitive, we can assume that the consumer has various options to choose from at the initial point of purchase and is not myopic. Under these assumptions, any given manufacturer will earn nonpositive profits; otherwise, he will be undercut and will lose customers.[39] The lock-in capability that is created by the manufacturers' possession of patented parts enables producers to earn quasi-rents on maintenance and repair services. Since it is necessary initially to place the durable to earn these quasi-rents, competition emerges for initial placement, and the price of the durable is driven down until a competitive equilibrium is reached. Note, however, that the ability to capture quasi-rents from maintenance and repair services allows the manufacturer to price the durable good below cost while sustaining nonnegative profits. As expected, competition among producers of durable goods will

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[39] Recall that all producers are assumed to be identical. If there were infra-marginal producers, then some would earn excess profits even in the competitive market.

drive profits to zero. Thus,

$$\Pi = P * Q + Q * \sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} - C(Q) = 0. \tag{4}$$

Rearranging algebraically, we have

$$P + \sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} = \frac{C(Q)}{Q}. \tag{5}$$

Since $C(Q)/Q$ is the average production cost, if it is true that excess profits are earned from maintenance and repair, i.e.,

$$\sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} > 0, \tag{6}$$

then manufacturers must be setting the initial purchase price of the durable good below cost:

$$P < \frac{C(Q)}{Q}. \tag{7}$$

In other words, in a competitive equilibrium, profits are zero, and, therefore,

$$\frac{C(Q)}{Q} - P = \sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t}, \tag{8}$$

i.e., the present value of the quasi-rents earned on maintenance and repair services just offsets the loss experienced in placing the durable. As a consequence, it is necessary to earn full quasi-rents in order to break even.

Suppose that under the expectation of earning monopoly rents from maintenance and repair services manufacturers set price below cost and, subsequently, competition emerges in maintenance and repair services. As manufacturers are forced to price their maintenance and repair services competitively, their profits will not only decline, but will become negative, i.e.,

$$\sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} < \frac{C(Q)}{Q} - P \tag{9}$$

and

$$\Pi < 0. \tag{10}$$

In an attempt to avoid such losses, the manufacturer has an incentive to prevent competition from developing in the aftermarket. Tying aftermarket services to the sale of the durable is one way of protecting aftermarket revenues. If, however, competition does arise, then, to remain viable, manufacturers must raise the initial purchase price of the durable so that the inequality in equation (9) becomes an equality. Hence, the emergence of competition in maintenance and repair services makes the consumer no better off. In summary, the net present value of the overall profits earned by the manufacturer will be zero given enough competition for the sale

of the durable good.[40] It is obvious that any monopoly rents earned from selling

maintenance and repair services are not injurious to consumers and do not signal a

breakdown in competition.

The case of monopoly

When the manufacturer of the durable good is a monopolist in the market for

the initial sales, he is interested in maximizing the profits that can be earned over the

lifetime of the durable. Therefore, the manufacturer's objective function is

$$\max_Q \Pi = \left[R * Q - C(Q) - Q * \sum_{t=1}^{T} \frac{m_t}{(1+r)^t} \right] \tag{11}$$

where R once again represents the total pricing decision made by the monopolist, i.e.,

$$R(Q) = P + \sum_{t=1}^{T} \frac{M_t}{(1+r)^t}. \tag{12}$$

The first-order condition for a maximum is

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[40]The same line of reasoning is applied to the auditing market in Linda Elizabeth DeAngelo, "Auditor Independence, 'Low Balling', and Disclosure Regulation," Journal of Accounting and Economics 3 (1981): 113-127. In her model, DeAngelo demonstrates how the practice of "low balling" (charging fees below costs) is consistent with competitive behavior. She notes that this practice "occurs in settings where (a) incumbent auditors earn quasi-rents and (b) the initial market for audit services is competitive." DeAngelo, 118-119. She develops a model in which long-run profits of auditing are zero; initial fees are below cost and quasi-rents are earned on future audits by incumbent auditors.

$$\frac{\partial \Pi}{\partial Q} = \left[R + Q \frac{\partial R}{\partial Q} \right] - \left[C'(Q) + \sum_{t=1}^{T} \frac{m_t}{(1+r)^t} \right] = 0. \tag{13}$$

From equation (13), the familiar result that profit is maximized by equating marginal revenue with marginal cost is attained, where marginal revenue is represented by the first bracketed term and marginal cost is represented by the second bracketed term. The preceding definitions of marginal revenue and marginal cost indicate that the maximization of profit occurs over the lifetime of the durable. The monopolist, therefore, cannot view initial sales and future maintenance and repair services as separate markets, given nonmyopic consumers.

Profit maximization can be accomplished by adjusting the initial purchase price and/or the price charged for maintenance and repair services since there exists a trade-off between the two. For example, suppose that the optimal life-cycle price is $2000 and that the monopolist increases the charges for maintenance and repair services. In order to keep profits at a maximum, the initial purchase price of the durable will have to be lowered; otherwise, those consumers unwilling to pay more than $2000 will exit the market.

If the manufacturer has a monopoly for the initial sale of the durable good, then it has no financial incentive to monopolize maintenance and repair services since it can extract the entire profit by appropriately pricing the initial sale of the durable

good.[41] For example, if the present value of the stream of competitively priced future maintenance and repair services is $1000 and the life-cycle price is $2000, then the monopolist can maximize profit and price maintenance and repair services competitively by simply setting the initial purchase price of the durable at $1000.

Suppose there did exist competition in maintenance and repair services. If the monopolist is as efficient as the ISOs, then the price charged for maintenance and repair services will be equal to the marginal cost of providing those services:

$$\sum_{t=1}^{T} \frac{M_t}{(1+r)^t} = \sum_{t=1}^{T} \frac{m_t}{(1+r)^t}. \tag{14}$$

The monopolist's maximization problem is

$$\max_{Q,Q_1} \Pi = P * Q - C(Q) + Q_1 * \sum_{t=1}^{T} \frac{M_t}{(1+r)^t} - Q_1 * \sum_{t=1}^{T} \frac{m_t}{(1+r)^t} \tag{15}$$

where Q is the number of durables sold and Q_1 is the number of those durables serviced by the monopolist. Obviously, $Q_1 \leq Q$. Competition in maintenance and repair services results in

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[41]This may not be true if the manufacturer views monopolizing maintenance and repair services as a means of raising barriers to entry into the initial sales market. For example, see United States v. United Shoe Machinery Corp. in which the court stated, "United's practice of offering to repair, without separate charges, its leased machines, has had the effect that there are no independent service organizations to repair complicated machines. In turn, this has had the effect that the manufacturer of a complicated machine must either offer repair service with his machine, or must face the obstacle of marketing his machine to customers who know that repair service will be difficult to provide." 110 F. Supp. 295 (D. Mass. 1953): 340.

$$P + Q\frac{\partial P}{\partial Q} - C'(Q) = 0 \tag{16}$$

and

$$\sum_{t=1}^{T} \frac{M_t}{(1+r)^t} - \sum_{t=1}^{T} \frac{m_t}{(1+r)^t} = 0. \tag{17}$$

It is apparent that the value of Q_1 will not affect the monopolist's pricing decision for the durable. As a result, the monopolist will adjust (raise) the initial purchase price in order to achieve profit maximization. Hence, the nature of competition in maintenance and repair services should be irrelevant due to the trade-off between the initial purchase price charged for the durable and the charges for subsequent maintenance and repair services. This, however, may not always be true. If the monopolist has the ability to foreclose rivals from the aftermarket (e.g., due to patented parts), then consumers' expectations will be such that they will predict maintenance and repair services to be supracompetitively priced. As a result, the monopolist will not be able to capitalize on its lone status in the primary market. Hence, the monopolist may enforce a tying contract in order to preserve monopoly profits in the aftermarket.

Implications

From the preceding analysis, it is clear that competition may very well not be harmed by the lock-in feature possessed by many manufacturers since excess profits are not necessarily earned. Even in the case where excess profits are earned, this is due to the manufacturer already having monopoly power in the primary market.

Furthermore, consumers are not harmed since they can choose among various manufacturers at the outset and their life-cycle cost remains unchanged. Regardless of whether one market is defined or two separate markets are identified, it is apparent that the relevant locus of competition must be at the initial point of sale of the durable good. It is at this point where both manufacturers compete for their customers and consumers make their purchasing decisions. This, however, is not the point of view frequently taken by the judiciary. The following section contains an analysis of an important Supreme Court decision concerning this issue.

<u>Case Study: Eastman Kodak Co. v. Image Technical Services, Inc.</u>

<u>Eastman Kodak Co. v. Image Technical Services, Inc.</u>[42] was the first in this class of cases to go before the Supreme Court. Ideally, one would hope that this decision might resolve many important issues. This, however, was not the case; rather, much controversy was stemmed by the Court's ruling as is evidenced by numerous commentaries.[43] A thorough analysis of the judicial decisions made during the course of this case will be conducted, using the preceding economic model

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[42]Eastman Kodak Co. v. Image Technical Services, Inc., 112 S.Ct. 2072 (1992).

[43]See, for example, George A. Hay, "Is the Glass Half-Empty or Half-Full?: Reflections on the <u>Kodak</u> Case," <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 177-191; Herbert Hovenkamp, "Market Power in Aftermarkets: Antitrust Policy and the <u>Kodak</u> Case," <u>UCLA Law Review</u> 40(6) (August 1993): 1447-1459; Joseph Kattan, "Market Power in the Presence of an Installed Base," <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 1-21; Robert H. Lande, "Chicago Takes it on the Chin: Imperfect Information Could Play a Crucial Role in the Post-<u>Kodak</u> World," <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 193-202; Gordon B. Spivack and Carolyn T. Ellis, "<u>Kodak</u>: Enlightened Antitrust Analysis and Traditional Tying Law," <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 203-216.

as the standard for evaluation. Such scrutiny will shed light on two important issues: (1) some of the flaws in current judicial reasoning and (2) how to conduct better analyses in future cases.

Kodak is a manufacturer of copier and micrographic equipment for which it also provides service. Kodak had recently changed its policy concerning the sale of replacement parts: Kodak sold replacement parts for its equipment only on the condition that ISOs would not be used to service that equipment, a condition which had previously not existed. Image Technical Services (ITS), along with other ISOs, alleged that Kodak was guilty of illegally tying parts and service and of illegal monopolization of service as a result of the new policy. The district court granted Kodak summary judgment. The decision, however, was reversed upon appeal, after which the case then proceeded to the Supreme Court.

Tying

The tying allegation will be examined first. This case differs from those examined above in that Kodak was alleged to have tied service to parts rather than parts (or service) to equipment. As expected, one of the major points of dispute in this case involved the identification of the relevant market(s). The ISOs, supported by the majority in both the appellate court and the Supreme Court, argued that parts and service were two distinct product markets.[44] On the other hand, Kodak,

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[44]The Supreme Court stated, "For service and parts to be considered two distinct products, there must be sufficient consumer demand so that it is efficient for a firm to provide service separately from parts." Kodak, 112 S.Ct. 2072 (1992): 2080. The Court did find this condition to be satisfied.

supported by the Supreme Court dissent, argued that the market was composed of one product: parts and service. Therefore, a tying arrangement could not exist: "Kodak contends that there is no separate demand for parts and service. Indeed, Kodak contends, they are useless without each other. Consequently they are economically inseparable."[45,46]

Indeed, as it has already been shown, the determination of the relevant product market is not easy, nor is it always obvious. In this case, the Court's finding is in accordance with the test enunciated in Jefferson Parish: two product markets are distinct if it can be shown that separate demand exists for each product.[47] There was evidence that some purchasers of Kodak equipment desired to buy parts but service the equipment themselves and that in some cases service was demanded that did not call for repair parts. Hence, the Court believed sufficient demand existed for service and repair parts separately for the two to be treated as separate markets. Despite the economic reality that two markets arose to serve the demand for durable good services, as demonstrated by the model, the manufacturer does not have the capability of creating an illegal tie unless it possesses monopoly power in the market for the sale of the durable good initially.

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[45]Image Technical Services, Inc. v. Eastman Kodak Co., 903 F.2d 612 (1990): 615.

[46]Justice Scalia's agreement with Kodak's argument is evident from his dissent: "These observations strongly suggest that Kodak parts and the service involved in installing them should not be treated as distinct products for antitrust tying purposes." Kodak, 112 S.Ct. 2072 (1992) at footnote 2, p. 2097.

[47]Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2, (1984): 19.

Since the majority in the Supreme Court did view Kodak's policy as a tying arrangement, the next determination to be made was the legality of the tie, i.e., whether Kodak had sufficient power in the tying good market to impede competition in the tied product market. Kodak correctly contended that it could not have market power in the sale of replacement parts (the tying market) since it did not have market power in the primary market for copier and micrographic equipment. Kodak was supported in this argument by Justice Scalia's Supreme Court dissent which correctly pointed out,

> Had Kodak . . . included a lifetime parts and service warranty with all original equipment, or required consumers to purchase a lifetime parts and service contract with each machine, that bundling of equipment, parts and service would no doubt constitute a tie. . . . Nevertheless, it would be immune from per se scrutiny under the antitrust laws because the <u>tying</u> product would be <u>equipment</u>, a market in which (we assume) Kodak has no power to influence price or quantity.[48]

Kodak's argument indicates that it perceives the relevant locus of competition to occur at the initial point of purchase for the durable itself. In its reasoning, Kodak adopts a life-cycle perspective, assuming nonmyopic consumers.[49]

The Supreme Court followed the same line of reasoning as did the appellate court, incorrectly locating the relevant locus of competition at the point of sale of replacement parts. Hence, the "market" in which the degree of market power was to be determined was identified as that for replacement parts for Kodak equipment. It is

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[48]Kodak, 112 S.Ct. 2072 (1992): 2095.

[49]This is further demonstrated by Kodak's argument that if it charged "supercompetitive prices for parts and service, equipment purchasers would buy competitors' equipment." Image Technical, 903 F.2d 612 (1990): 616.

not surprising that under this very restrictive market definition, Kodak was found to have monopoly power. As pointed out in Justice Scalia's dissent, "the sort of power condemned by the Court today is possessed by every manufacturer of durable goods with distinctive parts."[50] Such a limited market definition implies that no manufacturer with unique parts can exercise any control over the commercial use of those parts for fear of being charged with an antitrust violation.

The Court lists several factors in support of its finding of market power. One piece of evidence offered by both of the higher courts was that Kodak charged higher prices for service than ISOs. Under a life-cycle pricing strategy, however, a higher price means nothing in and of itself since it may very well be offset by a lower price charged initially for the durable. As previously discussed, such a strategy may be necessary in order to compete in the overall market for the flow of services.

Recall from the model in the preceding section that when competition existed for the initial placement of the durable, price was below average cost,

$$P < \frac{C(Q)}{Q}, \tag{18}$$

with the expectation that quasi-rents would be earned on subsequent maintenance and repair services,

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[50]Kodak, 112 S.Ct. 2072 (1992): 2094.

$$\sum_{t=1}^{T} \frac{(M_t - m_t)}{(1+r)^t} > 0. \qquad (19)$$

Hence, under these market conditions, the manufacturer must be able to earn quasi-rents on maintenance and repair services in order to initially place the durable. Consumers who purchase a durable at a price below average cost benefit initially; they then want to further extract benefits by obtaining maintenance and repair services at low cost. But, firms such as ITS who can offer maintenance and repair services at a lower price have not incurred the costs of initially placing the durable; ITS is, in this respect, a free rider.

The fact that consumers prefer to use lower-priced ISOs is irrelevant. Consumers will generally prefer to take advantage of lower prices, but decreased prices do not necessarily translate into enhanced efficiency and competition. Predatory pricing (if successful) is one example of decreased prices that ultimately harm competition. The fact that consumers enjoy taking advantage of the lower prices would never serve to validate predation. Likewise, consumers' preferences for lower service prices should not serve as a justification to keep individual competitors in business when overall competition may be harmed by efficient manufacturers having to exit the market.

It is interesting to note that the Supreme Court considers market power to be the power "to force a purchaser to do something that he would not do in a

competitive market."[51] Employing of a life-cycle approach it is clear consumers did have a choice in a competitive market. Specifically, the choice existed when initially choosing among the various manufacturers.[52] When a consumer selects a Kodak durable, it knows that Kodak repair parts will be necessary. Hence, the consumer elects to be locked in to using Kodak repair parts. Note that the consumer is not harmed by her choice, for she still receives the benefits of life-cycle competition.

As Kodak points out, even if it has market share in the tying market (regardless of how the market is defined), it is not necessarily able to appreciably exercise market power. In fact, Kodak contends that it cannot exercise market power in the tying market since it did not have market power in the primary equipment market. Adopting a life-cycle perspective, Kodak asserts that to charge supercompetitive prices would only result in a loss of customers.[53] Kodak is supported in its assertion by the Supreme Court dissent, which argued that

> a rational consumer considering the purchase of Kodak equipment will inevitably factor into his purchasing decision the expected cost of aftermarket support. . . . If Kodak set generally supracompetitive prices for either spare parts or repair services without making an offsetting reduction in the price of its machines, rational consumers

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[51]Jefferson Parish, 466 U.S. 2 (1984): 14.

[52]This conclusion is reached on the basis that "Image Tech does not contest that Kodak lacks market power in the interbrand market for copiers." Image Technical, 903 F.2d 612 (1990): 621.

[53]It is appropriate for Kodak to take a life-cycle perspective in this case since "it is uncontested that purchasers of copiers consider costs of maintenance and repair in deciding which brand to buy." Ibid.

would simply turn to Kodak's competitors for photocopying and micrographic systems.[54]

It is important to note, however, that Kodak may extract profits from its existing customers under its new policy. An existing customer will continue to use the Kodak machine as long as the present value of maintaining that machine is less than the present value of purchasing and maintaining a new machine, i.e.,

$$PV[M_{Kodak}] < [P + PV(M)]_{New \ Machine}. \qquad (20)$$

Thus, in order to assess correctly whether Kodak can effectively profit from a lock-in feature, it is necessary to compare the increase in revenues earned from those consumers who purchased the durable prior to Kodak's policy and remained with Kodak with the decrease in revenues from lost future sales due to a higher overall price being charged. Since Kodak is in a competitive market to place the durable, it simply cannot compete if it charges a supracompetitive life-cycle price. Thus, Kodak has no incentive to behave anticompetitively unless the profits to be extracted in the short run (from existing consumers) are extraordinary since such a service price increase can occur only one time. A reputation effect will prevent Kodak from repeatedly exploiting information asymmetries, i.e., by raising service prices on consumers who have already purchased the durable.

In further support of its decision, the Supreme Court asserts that "the sales of even a monopolist are reduced when it sells goods at a monopoly price, but the higher

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[54]Kodak, 112 S.Ct. 2072 (1992): 2097.

price more than compensates for the loss in sales."[55] The difficulty with this argument is that since Kodak faces competition in the primary equipment market, it does not have any market power. Therefore, higher prices would not offset lost sales. Sales would instead go to the lower-priced competitors.

The fact that service prices rose for Kodak with no indication of lower sales was used as additional evidence against Kodak's switching theory. This fact, however, may serve as support for the theory. Since there was no loss in sales, the higher service prices may in fact serve as an indicator that Kodak was trying to compete for initial placement of its durables, not that it was exercising monopoly power. As the Supreme Court itself pointed out, even a true monopolist will lose some sales with price increases.

The Supreme Court, reasoning that if increased prices result in decreased quantity demanded then decreased prices should result in increased quantity demanded, argued that Kodak should have wanted the ISOs to remain. Again, however, it is not the individual component price that affects the quantity demanded; rather, it is the overall price that makes a difference. If Kodak needed to remain competitive or even become more competitive in order to initially place its durables by pricing below average cost, then it may have been necessary to increase prices in the "aftermarkets." Hence, increasing service prices and decreasing the price for the durable itself may have enabled Kodak to become more competitive (not more powerful) in the market for the flow of services provided by the durable.

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[55]Ibid., 2084.

The Supreme Court presents arguments against Kodak's assertion of a life-cycle pricing strategy. The Court contended that such a claim could not be supported since "Kodak never has asserted that it prices its equipment or parts subcompetitively and recoups its profits through service."[56] Had Kodak claimed to price below cost, however, it would have run the risk of being charged with predatory pricing for the same reason it faces tying and monopolization charges: a lack of understanding about life-cycle pricing. Unlike the Court's statement, Kodak would not be pricing subcompetitively; rather, it would be meeting competition under a life-cycle pricing strategy by pricing one component below cost and another above cost.

The Supreme Court also agrees with the ISOs' argument that information costs prevent consumers from practicing effective life-cycle calculations. While it may very well not be possible for consumers to determine precisely the correct life-cycle price, it is not unreasonable to expect that the consumer has the ability to make accurate evaluations for comparison purposes. This is especially true since the good in question is not a trivial investment, providing an incentive for the consumer to research the product before making a purchase. Furthermore, the existence and availability of such informational sources as <u>Consumer</u> <u>Reports</u> and trade reports as well as the experience of others decrease information search costs.

The Supreme Court acknowledges that Kodak does have at least some "large-volume, sophisticated purchasers" who will invest in the necessary information, yet it argues, "there are reasons, however, to doubt that sophisticated purchasers will

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[56]Ibid., 2085.

ensure that competitive prices are charged to unsophisticated purchasers, too."[57]

This statement by the Court is incorrect since informed consumers will force the

manufacturer to do well by all consumers. The following simple analysis will model

this phenomenon.[58] Consider the following notation:

p_L = a low life-cycle price charged
p_H = a high life-cycle price charged
c = the overall cost of providing the flow of services
n = the proportion of purchases made by sophisticated consumers.

All consumers will buy the durable when the life-cycle price is low, but only the

uninformed consumers will buy when the life-cycle price is high. Thus, in order for

the manufacturer to be willing to provide the flow of services at the low price, the

following inequality must hold:

$$p_L - c \geq (1 - n)(p_H - c), \qquad (21)$$

i.e., the revenues from selling at the lower price to all consumers must be greater

than the revenues from selling at the higher price to only the uninformed consumers.

Rearranging, the following is obtained:

$$cn \leq P_L - (1 - n)p_H. \qquad (22)$$

The derivative of each side of equation (22) with respect to the variable "n" depicts

what occurs when the proportion of purchases made by sophisticated consumers

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[57]Ibid., 2086.

[58]This analysis is an adaptation of Tirole's model concerning the consumer's ability to evaluate quality. See Jean Tirole, <u>The Theory of Industrial Organization</u> (Cambridge, MA: The MIT Press, 1988), 107-108.

increases:

$$\frac{\partial cn}{\partial n} = c \qquad (23)$$

and

$$\frac{\partial [p_L - (1-n)p_H]}{\partial n} = p_H. \qquad (24)$$

Hence, as "n" increases, both the right-hand side and the left-hand side of equation (24) increase. Since $p_H > c$, however, the right-hand side increases more than the left-hand side, indicating that as the proportion of purchases made by sophisticated consumers increases, the more likely it is that equation (22) will be satisfied. Since there are at least a few large-volume buyers of Kodak equipment, it seems quite possible that there exists a sufficiently large proportion of informed purchasers. Therefore, the Supreme Court's contention that information costs would likely prevent consumers from effectively practicing life-cycle pricing is unsupported. Thus far, the tying allegation has been examined and nothing substantive has been found that indicates Kodak may be guilty of an illegal tie.

Monopolization

Recall that in order to support a claim of illegal monopolization the plaintiff must first show "the possession of monopoly power in the relevant market."[59] As previously noted, the market definition (as assessed by the Supreme Court) is unduly restrictive, resulting in Kodak possessing monopoly power as would any manufacturer

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[59]United States v. Grinnell Corp., 384 U.S. 563 (1966): 570-571.

of unique parts held to this test. Furthermore, it has been emphasized that it is competition in the primary equipment market that is of significance. As Justice Scalia argued in his dissent,

> if the interbrand market is vibrant, it is simply not necessary to enlist Section 2's machinery to police a seller's intrabrand restraints. In such circumstances, the interbrand market functions as an infinitely more efficient and more precise corrective to such behavior, rewarding the seller whose intrabrand restraints enhance consumer welfare while punishing the seller whose control of aftermarkets is viewed unfavorably by interbrand consumers.[60]

If the courts insist on viewing "aftermarkets" as independent and distinct markets from the primary equipment markets, then a reasonable market definition would be maintenance and repair services for all brands of durables of the same type. But, as indicated by the model presented earlier and by Justice Scalia's analysis, a claim of monopolization against the manufacturer in an aftermarket makes no sense when competition exists in the primary equipment market. Hence, there existed no basis for a monopolization claim by ISOs in this case.

Conclusion

The analyses contained in this paper demonstrate how a life-cycle approach may drastically alter the outcomes of judicial decisions in these durable goods cases. The adoption of a life-cycle approach will more accurately identify what is occurring in the market. Given that consumers' demand is for the flow of services provided by the durable, the focus must shift from what occurs after the initial purchase of the durable has been made to what is occurring in the primary market. Naturally, the

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[60]Kodak, 112 S.Ct. 2072 (1992): 2101.

effect of this is that the primary plaintiffs in future cases will likely be manufacturers of durable goods, rather than ISOs.

The other key question that remains is whether a manufacturer of a durable has the right to foreclose aftermarket rivals once it has already allowed their entry. It has been shown that such foreclosure will not result in harm to consumer welfare, i.e., the life-cycle cost remains unchanged. Hence, the question to be resolved is one of equity not economics.

There is still much analysis yet to be done in this area by both economists and the judiciary. Potential areas of future research include (1) the incorporation of uncertainty into the model, i.e., when M_L is not known, (2) an analysis of the various contractual arrangements that can be made between the manufacturer and consumers and a determination of which are most efficient, and (3) issues concerning information asymmetry between the manufacturer and consumers and the resulting incentives that arise. Additionally, a more detailed prescription for judicial analysis of these cases needs to be considered. Future analyses need to be conducted thoroughly and thoughtfully in order that both competition and innovation will not be thwarted.

UNITED SHOE MACHINERY REVISITED

Introduction

Section 2 of the Sherman Act states "every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize . . . shall be deemed guilty of a felony."[1] As with most laws, what constitutes illegal monopolizing behavior is influenced over time by earlier precedent-setting cases. United States v. United Shoe Machinery Corporation[2] is one of the most frequently cited cases in discussions concerning what constitutes illegal monopolization. Inasmuch as this is only a District Court opinion, the staying power of the opinion is quite remarkable.

The importance of the United Shoe Machinery decision is apparent as it is frequently employed to demonstrate a finding of illegal monopolizing conduct. United Shoe Machinery is among the key monopolization cases found in leading antitrust casebooks.[3] Various undergraduate antitrust textbooks also employ the case

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[1]26 Stat. 209 (1890), codified as amended, 15 U.S.C.A. Sections 1-7 (1987).

[2]United States v. United Shoe Machinery Corp., 110 F. Supp. 295 (D. Mass. 1953).

[3]See, e.g., William R. Anderson and C. Paul Rogers III, Antitrust Law: Policy and Practice (New York, NY: Matthew Bender & Company, Inc., 1985), 190-203; Phillip Areeda and Louis Kaplow, Antitrust Analysis: Problems, Text, Cases (Boston, MA: Little, Brown and Company, 1988), 487-500; Eleanor M. Fox and Lawrence A. Sullivan, Antitrust (St. Paul, MN: West Publishing Co., 1989), 146-156; Milton Handler, Harlan M. Blake, Robert Pitofsky, and Harvey J. Goldschmid, Trade Regulation, 2d ed. (Mineola, NY: The Foundation Press, Inc., 1983), 769-789; Richard A. Posner and Frank H. Easterbrook, Antitrust: Cases, Economic Notes, and Other Materials, 2d ed. (St. Paul, MN: West Publishing Co., 1981), 628-643; E.

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as an example of illegal monopolization.[4] Additionally, the <u>United Shoe Machinery</u>

case has stimulated a variety of commentaries that reveal conflicting academic

opinions regarding the wisdom of the court's ruling.[5] Included in these

commentaries is an analysis of the case by Masten and Snyder, who propose

efficiency justifications for United's leasing system.[6] Masten and Snyder examine the

court's decision predominantly from the point of view of contractual efficiency and

support their argument with econometric modelling.

Thomas Sullivan and Herbert Hovenkamp, <u>Antitrust Law, Policy and Procedure:</u>
<u>Cases, Materials, Problems</u>, 2d ed. (Charlottesville, VA: The Michie Company,
1989), 547-558.

[4]See, e.g., Roger D. Blair and David L. Kaserman, <u>Antitrust Economics</u>
(Homewood, IL: Richard D. Irwin, Inc., 1985), 104-106; Douglas F. Greer,
<u>Business, Government, and Society</u>, 3d ed. (New York, NY: Macmillan Publishing
Company, 1993), 146-147; W. Kip Viscusi, John M. Vernon, and Joseph E.
Harrington, Jr., <u>Economics of Regulation and Antitrust</u> (Lexington, MA: D.C. Heath
and Company, 1992), 261, 269.

[5]For opinions that believe the court ruled incorrectly concerning United Shoe's
motivation for leasing, see John Shepard Wiley Jr., Eric Rasmusen, and J. Mark
Ramseyer, "The Leasing Monopolist," <u>UCLA Law Review</u> 37 (April 1990): 693-731;
Robert H. Bork, <u>The Antitrust Paradox: A Policy at War with Itself</u> (New York, NY:
The Free Press, 1993), 138-142, 170-173; Scott E. Masten and Edward A. Snyder,
"The Design and Duration of Contracts: Strategic and Efficiency Considerations,"
<u>Law and Contemporary Problems</u> 52(1) (Winter 1989): 79-80; Richard A. Posner,
"Exclusionary Practices and the Antitrust Laws," <u>The University of Chicago Law</u>
<u>Review</u> 41(3), (Spring 1973): 528-532. But see Joseph F. Brodley and Ching-to Ma,
"Contract Penalties, Monopolizing Strategies, and Antitrust Policy," <u>Stanford Law</u>
<u>Review</u> 15(5) (May 1993): 1161-1213 for a supporting opinion and Carl Kaysen,
<u>United States v. United Shoe Machinery Corporation: An Economic Analysis of an</u>
<u>Anti-Trust Case</u> (Cambridge, MA: Harvard University Press, 1956), for an opinion
that not only supports the court's position, but is even more extreme.

[6]Scott E. Masten and Edward A. Snyder, "<u>United States versus United Shoe</u>
<u>Machinery Corporation</u>: On the Merits," <u>Journal of Law and Economics</u> 36 (April
1993): 33-70.

This essay examines the United Shoe ruling in order to evaluate the court's finding of illegal monopolization. Unlike Masten and Snyder, the approach taken here involves assessing the court's decision in light of the requirements for a proof of illegal monopolization enunciated in Grinnell.[7] While efficiency justifications are provided here as well for United's leasing practices, they are supported through theoretical modelling. Additionally, rather than focusing predominantly on one or two specific practices, this exposition contains a detailed analysis of each of the practices condemned by the court.

The analysis begins with a discussion of the requirements for a finding of illegal monopolization. Next, a brief history of the United Shoe Machinery Corporation and an explanation of the case itself is given. The following section provides an explanation of the antitrust concerns expressed by the court accompanied by an economic analysis of those concerns that demonstrates how United Shoe's actions were procompetitive rather than anticompetitive. The concluding section discusses the shortcomings of the test for a finding of illegal monopolization that was specified in Grinnell.

Illegal Monopolization

It is useful at this point to describe what constitutes an offense of illegal monopolization and to highlight those aspects that have distinguished the United Shoe Machinery case. As previously noted, monopolization[8] is a violation of Section 2 of the Sherman Act. It is important to observe, however, that the Act does not prohibit the structural condition of monopoly itself because some monopolies may emerge

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[7]United States v. Grinnell Corp., 384 U.S. 563 (1966)

[8]For a more comprehensive overview concerning the treatment of monopoly under the antitrust laws, see Roger D. Blair & David L. Kaserman, Antitrust Economics (Homewood, IL: Richard D. Irwin, Inc., 1985), 93-131.

from socially desirable efforts. For example, a monopoly that arose due to superior technology or efficiency would not be considered a violation. Rather, the Act prohibits behavior aimed towards achieving or maintaining a monopoly position through socially undesirable means.

Proving illegal monopolization requires that the following be demonstrated:

(1) the possession of monopoly power in the relevant market and
(2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historical accident.[9]

The first part of this proof requires that the relevant market be identified. The relevant market has two components: (1) the product market and (2) the geographic market. Nothing further will be discussed concerning the relevant market since its determination is not at issue in this analysis.

Market Power

Once the relevant market is identified, the next determination to be made is whether the defendant possesses monopoly power which is the firm's ability to profitably price above its costs. There are two main ways of examining the price-cost relationship. The first is to identify persistent excess profits, i.e., the existence of total revenues exceeding total costs. Under perfect competition, excess profits are zero:

$$P * Q - C(Q) = 0 \qquad (1)$$

where P and Q represent the price and quantity of the good sold by the individual firm and C(Q) represents the total costs of the firm. Expressed differently, producers break even when

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[9]Grinnell, 384 U.S. 563 (1966): 570-571.

$$P = C(Q)/Q = AC \qquad (2)$$

where AC is average cost. Hence, if price is found consistently to lie above average cost, that may serve as an indicator that the firm in question possesses market power.[10]

Another way of measuring market power is through the employment of the Lerner Index which measures market power by the degree to which the firm prices over marginal cost:

$$\lambda = \frac{P-MC}{P} \qquad (3)$$

where λ is the Lerner Index and MC is the firm's marginal cost. Another way of expressing the Lerner Index is

$$\lambda = \frac{1}{\eta} \qquad (4)$$

where η represents the absolute value of the price elasticity of demand.[11] This formulation naturally indicates that a firm that faces a relatively less elastic market

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[10]It is important to note that this method of determining market power is not as easy to employ as it might appear. One reason is that the costs used in the determination of excess profits must be economic costs not accounting costs. Most firms record accounting rates of return which generally do not contain sufficient information about economic rates of return. Thus, the correct determination of excess profits becomes a very difficult task. For more information concerning accounting and economic rates of return and their relationship to one another, see Franklin M. Fisher, "Diagnosing Monopoly," Quarterly Review of Economics and Business 19(2) (Summer 1979): 18-23; Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," American Economic Review 73(1) (March 1983): 82-97; Franklin M. Fisher, "The Misuse of Accounting Rates of Return: Reply," American Economic Review 74(3) (June 1984): 509-517.

[11]The derivation for this is given in Appendix 1.

demand will possess a greater ability to price above its costs. In other words, if there are comparatively few substitutes for a firm's product, that firm possesses a greater degree of market power, all other things held equal.

As there were a number of other shoe machinery manufacturers in the industry when United's behavior was in question, it may be useful to employ the Lerner Index for the dominant firm model. In this case, the Lerner Index is

$$\lambda = \frac{S_{DF}}{\eta + \epsilon_{CF}(1 - S_{DF})} \qquad (5)$$

where S_{DF} is the market share of the dominant firm and ϵ_{CF} is the elasticity of supply of the competitive fringe.[12] A quick examination of equation (5) shows that $\partial\lambda/\partial S_{DF} > 0$, $\partial\lambda/\partial\eta < 0$, and $\partial\lambda/\partial\epsilon_{CF} < 0$. Taking each of these partial derivatives in turn, an evaluation of the effect of the dominant firm's market share and of supply and demand elasticities on the ability of the dominant firm to price above its costs can be made. First, the greater the dominant firm's market share, the greater the firm's ability to price above its costs, all other things held equal. With a comparatively larger market share the proportional decrease in output necessary to increase price is smaller than when the dominant firm's market share is not as large. As pointed out in the discussion of equation (4), if the dominant firm faces a relatively elastic market demand, it will not have as great an ability to price above its costs due to the greater substitution opportunities available to its customers. Finally, the greater the elasticity of supply by competitors, the less ability the dominant firm has to price above its costs, all other things held equal. In other words, the easier it is for a firm to erect barriers to entry or to employ other exclusionary practices, the more potential it has for increasing its market power.

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[12]The derivation for this is given in Appendix 2.

Since the price-cost relationship is often difficult to evaluate, the market share possessed by a firm is often used as an indicator of monopoly power.[13] The courts are misguided, however, if they rely predominantly upon market share as a guide to market power. An examination of equation (2) reveals that market share alone is an inadequate indicator of market power.[14] Market share of the dominant firm is just one of three important components that determine the Lerner Index; the elasticities of market demand and supply must also be taken into account. For example, suppose the dominant firm has a market share of 70% and demand and supply elasticities are both 3, then the percentage price mark-up over cost is approximately 18%.[15] In contrast, suppose the firm's market share is 50%, but demand and supply elasticities are 1.5. In this case, the percentage price mark-up is 22%, which is higher than the mark-up that the firm possessing 70% of the market enjoyed.[16] In other words, for a firm to maintain a price-cost margin of 18% at the

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[13]The Supreme Court stated in <u>Grinnell</u>, "the existence of such power ordinarily may be inferred from the predominant share of the market." 384 U.S. 563 (1966): 571.

[14]See William M. Landes and Richard A. Posner, "Market Power in Antitrust Cases," <u>Harvard Law Review</u> 94 (March 1981): 937-996 and Fisher, "Diagnosing Monopoly," 12-18.

[15]The calculation of the Lerner Index is

$$\lambda = \frac{.70}{3+3(.30)} \approx .18.$$

[16]The calculation of the Lerner Index is

$$\lambda = \frac{.50}{1.5+1.5(.50)} \approx .22.$$

lower demand and supply elasticities of 1.5, it need only possess approximately 43% of the market.[17]

The implication of the above example is that a firm with a smaller market share may have the same ability to price over cost as a firm with a larger market share. Alternatively, a firm that possesses a large market share may have the same lack of power over price as a firm that possesses a small market share, depending on demand and supply elasticities. As a result, the employment of market share without any consideration of demand and supply elasticities may lead to incorrect conclusions and, therefore, incorrect remedies. Although demand and supply elasticities are almost impossible to calculate with great accuracy, it is possible to examine such factors as substitutability of products and ease of entry in order to get an idea of whether a large market share is indeed indicative of market power. While Judge Wyzanski's decision was not based solely on United Shoe Machinery's market share, which the court determined to be at least 75%, he did find that percentage to be troublesome. Although there was some reference to ease of entry, there was no explicit mention of demand and supply elasticities. Judge Wyzanski may have been misled in his concern over United's market share given his lack of knowledge concerning these important factors.

Intent

It is the second part of the proof that is of key interest in the United Shoe Machinery case. The court found United Shoe Machinery's behavior to be objectionable on the basis of its large market share: behavior that would not have

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[17]The 43% market share is obtained from the following calculation:

$$\frac{x}{1.5+1.5(1-x)} = 0.18.$$

Solving for x, 0.425 is obtained.

been the least bit objectionable and would normally be encouraged had United Shoe Machinery held a smaller share of the market. This part of the proof considers the "intent" of the firm. But, intent is difficult to prove and, therefore, a firm's behavior is relied upon as an indicator of intent. United Shoe Machinery's behavior was found to be objectionable by the court because the "defendant intended to engage in the . . . practices and . . . policies which maintained its market power."[18] Hence, "defendant having willed the means, has willed the end."[19] Among the practices that the court found objectionable were (1) the policy of leasing rather than selling machines and (2) various provisions and practices associated with the leases. These objectionable provisions and practices included the 10-year lease term, revenue protection provisions, the return policy, and the provision of "free" service. These practices will be examined in detail, and it is shown that rather than being exclusionary, they had procompetitive justifications.

<div align="center">Historical Background</div>

In order to better understand the circumstances surrounding the case, it is instructive to describe the environment in which the defendant was operating at the time its behavior was under scrutiny. Hence, a brief description of the history of the United Shoe Machinery Corporation, the shoe machinery market, and United's role in that market is in order.

History of United Shoe Machinery Corporation

The formation of the United Shoe Machinery Corporation had its beginning in February 1899 when seven companies (two of which were subsidiaries) merged to

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[18]United Shoe, 110 F.Supp. 295 (1953): 346.

[19]Ibid.

form the United Shoe Machinery Company of New Jersey.[20] The original
companies were the Goodyear Shoe Machinery Company (and its subsidiary,
International Goodyear Shoe Machinery Company), Consolidated & McKay Lasting
Machine Company, McKay Shoe Machinery Company, Davey Pegging Machine
Company, and Eppler Welt Machine Company (and its subsidiary, International
Eppler Welt Machine Company).[21] These companies were manufacturers, sellers,
lessors, and patentees of shoe machinery. Although the first three of the
aforementioned companies possessed a fairly large (60% or greater) market share, the
machines they manufactured differed in function.[22] Thus, they were not
competitors, and the merger could fairly be characterized as a product line extension
merger.

In the years spanning the 1899-1911 interval, the company had some 59
acquisitions only one of which was large and important.[23] The newly formed
company took the following actions that it continued until the 1953 case: (1) It
consolidated its manufacturing activities mainly into its Beverly, Massachusetts plant.
(2) It formed a service organization that met the maintenance, repair, and
informational requirements of its customers without separate charge. (3) It pursued a

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[20]For a more detailed history of the United Shoe Machinery Corporation, see Carl
Kaysen, United States v. United Shoe Machinery Corporation: An Economic Analysis
of an Anti-Trust Case (Cambridge, MA: Harvard University Press, 1956), 6-16.
Kaysen's work will be referred to frequently since he served as a "law clerk" to
Judge Wyzanski and his opinions and economic analyses served as a major influence.
Examining his opinions may lend insight into the court's ruling.

[21]United States v. United Shoe Machinery Company of New Jersey Et Al., 247
U.S. 32 (1917): 38-39 and Kaysen, 6.

[22]Kaysen, 6-7.

[23]For a discussion of the acquisitions made by United, see United Shoe of New
Jersey, 247 U.S. 32 (1917): 47-56 and Kaysen, 8-9.

policy, which had previously been practiced by the key constituent companies, of leasing rather than selling many of its machines.[24] Ultimately, these last two became important in the 1953 case.

The 1917 suit

In 1911, the Government brought suit against the United Shoe Machinery Company of New Jersey alleging (1) that the original merger as well as the later acquisitions violated Section 1 of the Sherman Act, which deals with the illegality of contracts, combinations, and conspiracies in restraint of trade, and (2) that the United Shoe Machinery Company of New Jersey was in violation of Section 2 of the Sherman Act, which deals with illegal monopolization. Aside from the original merger, the chief means by which these violations were allegedly promoted was through various lease provisions.[25] The district court found for United. The Government appealed the case which then proceeded to the Supreme Court, and in 1917 the Supreme Court, in a divided opinion, upheld the lower court's ruling.

As to the merger itself, the district court (the Supreme Court agreed with the conclusions of the lower court) did not find any antitrust violation for two major reasons. First, the court did not consider the merging companies as producing competing goods; rather, the companies were treated as dealing in complementary goods.[26] Second, the court believed the motivation for the merger was based on

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[24]Kaysen, 9.

[25]United Shoe of New Jersey, 247 U.S. 32 (1917): 38.

[26]Kaysen comments that this view of competition is narrower than that taken in the 1953 case in which the relevant market definition was all shoe machinery requirements of United States' shoe manufacturers with the exception of the dry thread sewing machines. Kaysen argues that such a view would not later have been taken by the Court, i.e., that the merging companies would have been considered to be competitors. See Kaysen, 12-13.

efficiency reasons, not for the purpose of monopolization. In its opinion, the Supreme Court described United's growth as the necessary outcome of technological progress, i.e., the acquisitions made by United were necessary for United to remain competitive in a changing technological environment.[27] The Supreme Court further described United's large size as "at once the result and cause of efficiency."[28]

The other chief complaint of the Government was that certain lease provisions of the company were unduly restrictive and facilitated the acquisition of monopoly power on the part of the defendants. In defense, United argued that any monopoly power it had was legitimate due to its patent holdings.[29] First, the Government apparently opposed the concept of leasing itself as it believed that leasing was too restrictive because the lessees were unable to change or cancel a lease once an agreement was made.[30]

Within the leases, the Government objected to the "tying" clauses, which required the lessee to lease other United machines in conjunction with machines separately leased. The Government felt that such "tying" clauses, in addition to other lease provisions, resulted in lessees of United machines not dealing in the products of United's competitors. A brief summary of the more important clauses follows: (1) The lease term was 17 years. (2) There was an "additional-machines" clause that required the lessee to lease additional United machines for any overflow of work done

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[27]United Shoe of New Jersey, 247 U.S. 32 (1917): 55-56.

[28]Ibid., 56.

[29]Ibid.

[30]Ibid., 59. This concern seems ill-founded because used machinery carries a low price and, therefore, purchasing (versus leasing) a machine does not enhance economic flexibility very much. For a more complete discussion concerning the pros and cons of leasing versus selling, see notes 63-86 and accompanying text of this essay.

by the leased machinery; otherwise, the lessee risked the cancellation of the lease as well as that of other leases for the same type of machinery. The Court noted that this clause was no longer employed at the time of the suit. (3) There was an "exclusive-use" clause that necessitated that certain machines as well as their complementary auxiliary machines be used to the exclusion of all competitive machines of the same type. Once again, failure to comply meant the lessee risked cancellation of his lease as well as the leases of the auxiliary machines. (4) There was a prohibitive clause that forbade a lessee from using a United machine under lease for work on footwear upon which work was performed by non-United machines. (5) There was a termination-of-all-leases clause that gave United the right to cancel not only a lease whose terms were violated by the lessee, but all leases held by the lessee, should the terms of any one lease be violated. (6) There was a full-capacity clause that required that any specific machine be used to its full capacity in order that the lessee used it to perform the work for which it was designed whenever such work was available. In other words, if there existed such demand that the machine type in question could be employed in production, the lessee was required to employ its United machine for all such work until its full capacity was reached before employing a competitor's machine. According to United, this clause was incorporated in order to collect its royalty, which was based on the usage of the machines. In addition, it is noted by the Court that this was a clause that had been employed by the Consolidated Company in its leases before the original merger occurred. (7) There was a fee levied when leased machinery was returned.[31]

The Supreme Court did not find the leases to be detrimental to competition for two major reasons. First, the Court did not view United's intent as being

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[31]See United Shoe of New Jersey, 247 U.S. 32 (1917): 61-63 for further explanation of the lease terms.

anticompetitive.[32] The Court felt that the fact that the constituent companies had similarly leased their machines prior to the merger indicated that the leases were not implemented as part of a scheme to monopolize.[33] The Court also pointed out that there were advantages to the leasing system. One such advantage was that shoe manufacturers could enter the industry and prosper even if they started out with little or no capital. Another advantage to the shoe manufacturers was the superior continuing service provided by United which helped to prevent shoe manufacturers from suffering great losses due to machine breakdowns.[34] Furthermore, the Court pointed out that the leases

> were entered into by the lessees upon a calculation of their value--the efficiency of the machines balanced against the restrictions upon and conditions of their use. The lessees had the alternative of the choice of other machines for other machines were sold side by side with those the leases covered.[35]

That the lessees chose to enter such an agreement with other alternatives available indicates that, on balance, the United Shoe Machinery offer was better than those of rival suppliers.[36]

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[32]The determination of the defendant's intent is extremely important in deciding the outcome of a case. It was a finding of anticompetitive intent that resulted in the United Shoe Machinery Corporation losing its case in 1953.

[33]United Shoe of New Jersey, 247 U.S. 32 (1917): 63.

[34]Ibid., 63-64. The service was implicitly included with the lease agreements.

[35]Ibid., 65.

[36]A brief discussion of the likelihood that shoe manufacturers would voluntarily give United greater monopoly power is found in Richard A. Posner and Frank H. Easterbrook, Antitrust: Cases, Economic Notes, and Other Materials, 2d ed. (St. Paul, MN: West Publishing Co., 1981), 639-640. They argue that a consumer of a product would not want to promote the acquisition of monopoly power by its supplier. In direct contrast, it may be argued that a consumer will contribute to a dominant firm's market power if that firm makes a better offer and because no single consumer has the power to influence price alone. These two opposing arguments render the

Another issue the Court confronted was whether the leases were a lawful exercise of United's legal patent monopoly. The district court answered the question in the affirmative. The Supreme Court agreed and went on to point out that although a patentee may have monopoly power, it does not have the power of coercion. In other words, the patented product will be employed only if its price, both in terms of monetary units and any restrictions placed on its use, meets with the willingness of consumers to pay.[37]

The 1921 suit

In 1914, the Clayton Act was passed, Section 3 of which forbade conditions in sale or lease contracts that have the tendency to reduce competition or promote the acquisition of monopoly power through an agreement not to deal in the products of the seller's/lessor's competitors. This statute (unlike the Sherman Act) explicitly stated its application to both patented products as well as unpatented products. Under the Clayton Act, the Government again brought suit against United, which by this time was known as the United Shoe Machinery Corporation. The Government alleged in its suit that many of the lease provisions contained in United's leasing system had the combined effect that shoe manufacturers would be induced not to trade in the products of United's competitors, thereby violating Section 3 of the Clayton Act.

The District Court found for the Government, prohibiting United from employing certain clauses in its leasing system. The main clauses that the court found objectionable were the additional-machinery, exclusive-use, prohibitive, and termination-of-all-leases clauses as defined in the 1917 case (see clauses (2)-(5)) in

role of the consumer in promoting a dominant firm's market power ambiguous.

[37]United Shoe of New Jersey, 247 U.S. 32 (1917): 65.

addition to (1) a supplies clause that required the lessee to buy its supplies only from United, (2) a patent insole clause that required that lessees employ United machines to sew shoes that had United's patented insole as well as for the reinforcement of such insoles, (3) a factory output clause that required a royalty payment by the lessee on certain machine operations, whether using United's or a competitor's machines, and (4) a discriminatory royalty clause that granted a lower royalty to lessees who did not use specified United machines on shoes that were lasted on competitors' machines.

The following three additional clauses were also complained of by the Government, but were not found to be anticompetitive: (1) a full-capacity clause as described in clause (6) of the 1917 case, (2) a part-repairs-and-attachments clause that provided that the lessee purchase any necessary parts to, attachments for, repair and/or service of machines from United, and (3) a removal-of-unnecessary-machinery clause that gave United the right to demand the return of any machinery that was unnecessary to meet the output requirements of the lessee.[38] The court considered the part-repairs-and-attachments clause to be a clause that harmlessly protected the operation of United's machines. The court felt that the full-capacity and removal-of-unnecessary-machinery clauses were legitimate sources of protection for United's revenue given that a royalty system of payment was employed.[39,40] United appealed, and in 1921, the Supreme Court upheld the district court's rulings. The Supreme Court stated,

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[38]See United Shoe of New Jersey, 247 U.S. 32 (1917): 456-457 and Kaysen, 13-15 for further descriptions of the lease agreements. Kaysen delineates which clauses applied to which machine types.

[39]Kaysen, 15.

[40]See notes 101-118 and accompanying text of this essay for further discussion of United's revenue protection provisions.

> When it is considered that the United Company occupies a dominating position in supplying shoe machinery of the classes involved, these covenants signed by the lessee and binding upon him effectually prevent him from acquiring the machinery of a competitor of the lessor except at the risk of forfeiting the right to use the machines furnished by the United Company which may be absolutely essential to the prosecution and success of his business.[41]

It was shortly after this ruling that United developed what was essentially the leasing system in place at the time of the 1953 case.[42]

Environment in 1953

At the time of the case, there were approximately 1460 shoe manufacturers in the United States.[43] In shoe manufacturing, there are both major and minor processes that are employed. Which processes are used depends upon the shoe type. There were a total of 18 major processes employed by all shoe manufacturers.[44]   At the time, United was the only shoe machinery manufacturer that supplied a long line, i.e., it provided all the major machine types and many of the minor machine types.[45] The court found United's share of the shoe machinery market to be greater than 75% and probably as high as 85%.[46] This is not to imply, however, that United did not face competition since there were at least 10 other American manufacturers and some foreign manufacturers.[47] Furthermore, virtually of the operations performed in the

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[41]United Shoe of New Jersey, 247 U.S. 32 (1917), 457-458.

[42]Kaysen, 15.

[43]United Shoe, 110 F. Supp. 295 (1953): 338.

[44]Ibid.

[45]Ibid., 339.

[46]Ibid.

[47]Ibid.

18 major process could be accomplished and an entire shoe factory could be created without employing a United machine.[48]

Summary and Analysis of Antitrust Concerns

The Government provided the court with an extensive list of complaints against the United Shoe Machinery Corporation. This section summarizes the key complaints made by the Government and the court's response to those complaints in addition to providing an economic evaluation of the court's ruling. The court's main objections were to those complaints associated with United's leasing system. Hence, it is this component of United's practices that receives the greatest amount of attention in this analysis. This section is divided into two major parts: (1) those complaints not directly associated with United's leasing system and (2) those complaints that are directly associated with United's leasing system.

Non-Lease Complaints

Although most analyses of this case omit the following non-lease complaints, a brief description is useful in getting both a better feel for United's policies and intent and a better understanding of the court's general attitude.[49] There were eight major non-lease complaints.

1. Acquisitions

The Government complained that United gained market power through various acquisitions made over the years. In its review of United's acquisitions, the court noted that United was not aggressively seeking out acquisition opportunities. Instead, United was cautious in making acquisitions and often refused to acquire even

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[48]Ibid.

[49]For a more complete description of these complaints, see United Shoe, 110 F. Supp. 295 (1953): 307-314, 325-338. See pp. 351-354 of the ruling for the court's remedy.

important machines. Although the court did not feel United's acquisitions were a key source of its market power, it did believe that the fact that a significant number of shoe machinery manufacturers and/or innovators in the field of shoe machinery came to United with acquisition opportunities served as an indication of United's market power. Furthermore, the court limited the degree to which United could make future acquisitions.

Even though the court did not condemn United's past acquisitions, the fact that it felt the need to limit the scope of future acquisitions shows that it was concerned with the role of acquisitions in United's illegitimately attaining market power. Consider the viewpoint of the party interested in selling a process, patent, or innovation. The seller is interested in selling his process, patent, or innovation to the entity with the greatest usefulness and/or willingness to pay for it. In the case of the shoe machinery industry, United may very well have been that entity due to its superior efficiency, its expertise in the field, and its high quality of research and development. United should not be penalized for possessing such desirable properties. If United were interested in acquiring market power by excluding competitors, it seems logical to expect that it would have been more aggressive in seeking out acquisitions and that it would have taken advantage more frequently of acquisition opportunities.

2. Restrictive agreements

The Government charged that United "'entered into agreements and understandings with various manufacturers of shoe machinery and shoe repair machinery designed to restrict, curtail, and prevent their competition in the manufacture and sale of such machinery.'"[50] After reviewing the examples

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[50]Ibid., 312.

presented by the Government, the court found the allegedly restrictive agreements to be non-exclusionary, insignificant, or even unproven altogether. Hence, the court did not find the agreements to have had any important anticompetitive effect.

3. Pricing policy for shoe machinery

There was concern by both the Government and the court over the manner in which United's pricing policy discriminated between machine types. Basically, United had a higher mark-up over cost for those machine types facing relatively less competition. For those machine types that faced a greater degree of competition, United would lower its prices to meet competition and/or introduce new or improved models. Surprisingly, the concern was not so much over the higher mark-up as it was over the fact that United lowered its prices to meet competition. Although the court expressed concern over United's pricing policy, it took no action since it believed any remedy it might prescribe (e.g., a uniform mark-up or regulation) would not be a marked improvement.

Further comment on this policy is merited. The court pointed out that in lowering its pricing to meet competition, United never engaged in predatory pricing, nor did it ever undertake a project for which it did not expect to recover its investment. Such behavior is clearly not anticompetitive. To suggest that lowering prices toward the competitive level is an indication of monopolizing behavior is illogical. To the contrary, such a reaction by United is an example of the forces of competition at work: a firm charging prices above the competitive level is unable to sustain those prices without losing market share due to the presence of competing firms. Furthermore, the fact that United did have to take such measures to meet

competition serves as an indication of its lack of monopoly power over those machine types.[51]

4. Research

The Government further charged United with attempting to reduce competition by anticipating future demand for new and/or improved machinery and by producing machinery designed to compete with new or improved models of machinery introduced by competing shoe manufacturers.[52] Although the court recognized the high quality of United's research division, it did not consider it to have been instrumental in United's success, nor did it believe that most of United's research attainments could not have been made in the absence of a company of United's size. On the other hand, the court also did not consider United's research activities to have been anticompetitive in nature.

While it may very well be true that the advances made by United could have been achieved by a firm (or firms) of smaller size, as was suggested by the court, this ignores the importance of the rate of innovation.[53] Technological innovation often

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[51]Fisher states that "monopoly power is the power to keep prices high, earn supranormal profits, and still exclude competitors." See Fisher, "Diagnosing Monopoly," 30.

[52]This charge bears great resemblance to the one in Alcoa that alleged that Alcoa illegally maintained its market share in the aluminum industry by increasing its supply of virgin aluminum ingot such that it could meet not only its current demand but also the expected future demand. United States v. Aluminum Company of America, 148 F.2d 416 (2d Cir. 1945): 430-431.

[53]Scherer describes how increases in dynamic efficiency, i.e., due to technological innovation, can more than compensate for decreases in static efficiency, i.e., due to a decrease in the competitiveness of the market. Scherer demonstrates this through the following hypothetical example. Under a competitive economy, suppose that current GNP is $2 trillion with an annual rate of growth of 3 percent. Scherer compares this economy with a monopolistic one which has a GNP of $1.8 trillion. The 10% difference in GNP between the two economies represents the difference in static efficiency. If the monopolistic economy results in a faster rate of technological

results in productivity increases that lead to greater efficiency in the long run. Technological diffusion may result in a decreased rate of innovation relative to the rate of innovation when technological development is concentrated in a single firm. If United's size allowed it to make more rapid strides in research and development than would otherwise have been possible, then it may have allowed for greater dynamic efficiency to have been achieved overall, i.e., greater productivity in shoe manufacturing. In such a case, the efforts of the firm should be encouraged.[54]

5. Policing of competition

The Government objected to the role of United's roadmen in reporting on the installation and use by shoe manufacturers of competitors' machines. The court noted that the shoe manufacturers themselves did not indicate that they were upset with this practice. Little comment is made by the court concerning this complaint except that this practice was indicative of United's attentiveness to competition.

6. Patents

The Government alleged that United's accumulation of patents had underlying anticompetitive intent. The court did not find patents to be a significant source of

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improvement, e.g., the annual rate of growth of GNP is greater than 3 percent, then eventually the GNP under the monopolistic economy will overtake that of the competitive economy. For example, if the annual rate of growth of GNP under the monopolistic economy were 5 percent, then it would equal that of the competitive economy in five years and it would be greater than that of the competitive economy after that period. Hence, the greater dynamic efficiency in the monopolistic economy more than compensates for the loss in static efficiency. F. M. Scherer, Industrial Market Structure and Economic Performance (Boston, MA: Houghton Mifflin Company, 1980), 21-23.

[54]Scherer summarizes studies testing the Schumpeterian hypothesis, which contends that a monopolistic market structure is better suited for carrying out technological innovation. One implication of the findings is that some bigness may be good for innovation while too much may be detrimental. The other implication is that some combination of monopoly power and competition is good for the rate of technological innovation. Ibid., 407-438.

market power for United. The court did, however, in its aim to reduce what it considered to be United's illegal monopoly power, order compulsory licensing of United's patents. But, ordering compulsory licensing may counter the purpose of patents: to encourage innovation. It is the exclusivity of a patent that allows rents to be earned and, therefore, encourages innovation. Even when compulsory licensing is for the rights to those patents acquired from other firms, the market value of those patents may be reduced, resulting in a reduced incentive to innovate.

The only means by which the innovating firm would not be harmed by compulsory licensing is if it is allowed to charge a royalty that is equal to the monopoly rents it would have received under exclusive patent rights. The court ordered that a "reasonable" royalty be charged on all licensed patents, creating the distinct possibility that the full monopoly rents would not be received.[55] Scherer suggests that compulsory licensing may be useful when "judiciously confined to cases in which patent-based monopoly power has been abused or extended far beyond levels needed to provide adequate incentive."[56,57] The court stated that it did not believe such abuse had occurred. Its remedy, however, indicated that it did not find United's behavior concerning patent rights to be fully acceptable. This is yet another example of the court not finding any wrongdoing on United's part, but treating United (in its final decree) as if it had found anticompetitive behavior.

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[55]The court further stated that "this Court reserves jurisdiction to pass upon the reasonableness of any royalty or charge herein directed to be reasonable." United Shoe, 110 F. Supp. 295 (1953): 254.

[56]Scherer, 457.

[57]It is important, however, to note that in determining what "level" is appropriate to provide adequate incentive, it is necessary to incorporate the expected risk faced by the firm in that determination. In other words, it is the ex ante risk predicted by the firm that matters in assessing appropriate rates of return, not the risk evaluated ex post.

7. Second-hand shoe machinery

The Government was upset with United's practice of purchasing second-hand shoe machinery, much of which it had produced. The court did not find sufficient evidence that United employed the machines itself or that it resold them. As a result, the court considered the purpose of such action to be anticompetitive and ruled that United could not purchase or acquire such machinery. The court did, however, allow limited purchases of second-hand shoe machinery for such reasons as experimentation.

This ruling was not unreasonable. Preventing a second-hand market from emerging may very well restrict competition. If second-hand goods serve as reasonable substitutes for new goods, then it is fair to include those second-hand goods in the product market definition. As a result, the foreclosure of those goods from the market will necessarily restrict competition to some extent.

Judge Wyzanski was convinced that a second-hand market would be important in providing competition in the shoe machinery industry.[58] He felt that a second-hand market would not only enable outside interests to purchase second-hand machinery for employment in shoe manufacturing, but that it would also allow competing firms to copy non-patented features of United's machines. Although the

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[58]Note that this opinion differs from Judge Hand's ruling in Alcoa in which he ruled that the second-hand market should not be included in the computation of market share since he believed Alcoa took this second-hand market into account when making its production decisions. This opinion, however, is not inconsistent with Alcoa since both opinions considered the second-hand market to be important. See Alcoa, 148 F.2d 416 (2d Cir. 1945): 425. In addition, see Darius W. Gaskins, Jr., "Alcoa Revisited: The Welfare Implications of a Secondhand Market," Journal of Economic Theory 7(3) (March 1974): 254-271 for an analysis which supports Judge Hand's determination of the relevant market.

prevention of a second-hand market does have the potential for anticompetitive harm, it appears that this was not the case in the shoe machinery industry.[59]

8. Shoe factory supplies

The Government charged that United had "'engaged in a program designed to enable it to provide all shoe factories in the United States with all shoe factory supplies required by them.'"[60] The court examined the different supply categories separately. In those supply types that it found to be monopolized by United, the court ordered United to divest both the manufacture and the distribution of those supplies. The court also ordered United to stop distributing supplies produced by other companies. Concerning the distribution of supplies not manufactured by United, the court further stated, "United ought not to be allowed to continue these distributorships because they flowed to United partly, at any rate, as an indirect consequence of United's prohibited monopolization of shoe machinery."[61]

This is another area in which the court may have had a valid concern. The economic consequences concerning this aspect of the case, however, are unclear. The court only took into account market share in its determination of United's monopoly power in the different supply areas. As previously emphasized, market share alone is insufficient for determining monopoly power. If the court was correct in its assessment of United's monopoly power, then its remedy would have led to increased efficiency, assuming that it led to a competitive market. If, however, the court's ruling led to another firm gaining monopoly power, then efficiency was not increased

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[59]See notes 78-79 and accompanying text for evidence that the second-hand market was not significant in providing competition in the shoe machinery industry.

[60]United Shoe, 110 F. Supp. 295 (1953): 334.

[61]Ibid., 351.

and may have been harmed. There is no indication of what happened in the supply market after the court's ruling.

Summary of non-lease complaints

The above complaints demonstrate how the court generally took a hostile attitude toward United. Even where the court claimed to find no anticompetitive harm on United's part, it still limited United's future actions. There is a clear inconsistency between the court's finding and its remedy which can only lead to confusion over what is acceptable firm conduct.

Lease-Related Complaints

The court found the leases themselves and the conditions contained therein to be objectionable. In contrast to the outright sale of machines, the court felt that the use and the design of the leases served as a barrier to entry in the shoe machinery market. In his opinion, Judge Wyzanski stated, "the three principal sources of United's power have been the original constitution of the company, the superiority of United's products and services, and the leasing system. The first two of these are plainly beyond reproach."[62] If it can be demonstrated, therefore, that United's leasing system was designed to meet the needs of shoe manufacturers in addition to having efficiency justifications, then United's market power status should not have been condemned. Such a showing will be made in this section.

It is important to begin by noting that leasing had been practiced in the shoe machinery industry since the Civil War: not just by United Shoe Machinery and its predecessors, but by its competitors as well. Generally, shoe manufacturers (i.e., United's customers) had not complained of this practice before or during the trial. Additionally, United's main competitor also practiced leasing and actually was in

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[62]Ibid., 344.

favor of the practice. A description of the key antitrust concerns and an economic analysis of the court's ruling follows. The concerns can be usefully grouped into (1) leasing itself and (2) specific terms of the lease.

Leasing v. selling

Aside from certain provisions in United's leases, the court found the lease-only policy, associated with many of United's machines, to be objectionable.[63] The court felt that the lease-only policy restricted competition in several ways: (1) by making shoe manufacturers less likely to switch to alternative brands; (2) by preventing the formation of a second-hand market; and (3) by making it more difficult for competing firms to copy non-patented parts. The court's remedy concerning this aspect of United's practices was to order the reduction of lease terms to no more than five years in addition to ordering that United offer any machine for sale that it offered for lease with the sales option being approximately as attractive as the lease option. While the above objections may give cause for concern, there are some serious problems with the court's analysis (or lack thereof) and its resulting ruling.

One problem is that while the court did acknowledge that there are benefits to leasing, it did not make any attempt to weigh the beneficial against the harmful effects of leasing in a true rule of reason analysis. Fundamentally, the court based its decision on the presumption that United's lease-only policy was detrimental to competition. Furthermore, it appears that the court objected so strongly to the lease-only policy because of United's large size. The court did not seem uncomfortable with the fact that leasing had been a policy of the industry for many years and that United's competitors also practiced leasing; rather, it seemed concerned that a company of United's size had a lease-only policy.

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[63]Some machines were offered for sale, but virtually all of the major ones were offered on a lease-only basis. Kaysen, 28.

Advantages of leasing. There are important advantages to leasing that the court barely recognized in its opinion and certainly did not take into account in its analysis.[64] One potential advantage of leasing is that it may allow a shoe manufacturer to avoid bankruptcy in the case of financial difficulty since the firm's inability to pay under a lease contract may result only in the repossession of equipment. Another advantage of leasing is that it allows firms with little or no capital to enter the industry since the lease enables them to avoid a large downpayment and acts as a form of financing. This point was made in the testimony of shoe manufacturers in the 1917 case and was recognized in both the 1953 and 1967 cases.[65,66]

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[64]For further discussions of the incentives to lease, see Richard Brealey and Stewart Myers, Principles of Corporate Finance (New York, NY: McGraw-Hill Book Company, 1981), 526-536; Haim Levy and Marshall Sarnat, Capital Investment and Financial Decisions (Englewood Cliffs, NJ: Prentice-Hall International, Inc., 1978), 95-97; and John Shepard Wiley Jr., Eric Rasmusen, and J. Mark Ramseyer, "The Leasing Monopolist," UCLA Law Review 37 (April 1990), 709-715. For more technical treatments of the lease-or-buy decision, see David Flath, "The Economics of Short-Term Leasing," Economic Inquiry 18(2) (April 1980): 247-259; Robert W. Johnson and Wilbur G. Lewellen, "Analysis of the Lease-or-Buy Decision," The Journal of Finance 27(4) (September 1972): 815-823; Merton H. Miller and Charles W. Upton, "Leasing, Buying, and the Cost of Capital Services," The Journal of Finance 31(3) (June 1976): 761-786; and Richard F. Vancil, "Lease or Borrow--New Method of Analysis," Harvard Business Review 39 (September 1961): 122-136.

[65]In the 1917 case, both small and large shoe manufacturers testified that United's policy of leasing enabled them to prosper in the shoe manufacturing industry. See United Shoe of New Jersey, 247 U.S. 32 (1917): 63-64. Furthermore, in both the 1953 and 1967 cases, Judge Wyzanski recognized this financing advantage to shoe manufacturers. See United Shoe, 110 F. Supp. 295 (1953): 323 and United States v. United Shoe Machinery Corporation, 266 F. Supp. 328 (1967): 332.

[66]The 1967 case was a follow-up to the 1953 ruling in which the plaintiff and the defendant each expressed dissatisfaction with the 1953 ruling and requested that changes be made. For further discussion of the 1967 case see notes 71-81 and accompanying text of this essay.

In addition, leasing allows the lessor to act as an insurer against risk. The shoe manufacturer faces risk if the life of the machine is uncertain or if the maintenance and repair requirements are uncertain. For example, consider a shoe manufacturer that is debating between purchasing a machine and leasing a machine. The life cycle price associated with a machine purchase is

$$P = I + \sum_{t=1}^{T} \frac{M_t}{(1+r)^t} - \frac{S}{(1+r)^T} \qquad (6)$$

where I is the initial purchase price of the machinery, M_t is the maintenance and repair expenditure in period t, r is the discount rate, S is the scrap value, and T is the life of the machine. On the other hand, the cost to the shoe manufacturer of leasing the machine is

$$R = \sum_{t=1}^{T} \frac{L_t}{(1+r)^t} \qquad (7)$$

where L_t is the amount of the periodic lease payment.

In a nonstochastic environment with rational consumers, P and R should be the same. If P = R, then

$$I + \sum_{t=1}^{T} \frac{M_t}{(1+r)^t} - \frac{S}{(1+r)^T} = \sum_{t=1}^{T} \frac{L_t}{(1+r)^t}. \qquad (8)$$

Equation (8) implies

$$I - \frac{S}{(1+r)^T} = \sum_{t=1}^{T} \frac{L_t - M_t}{(1+r)^t}. \qquad (9)$$

Equation (9) shows that leasing is simply a financing mechanism. Instead of initially

making one lump-sum payment for the durable, the consumer makes periodic payments over T periods. In either case, the net present value of the cost to the buyer will be the same. This will be true irrespective of market structure due to life cycle costing on the consumer's part. The rational consumer will compare the total lease price with the total purchase price and will choose what he considers to be the best deal. If the market is competitive, then a firm cannot extract higher rents through a leasing policy since consumers will evaluate the life cycle cost to them and either purchase or lease the required machinery from a competing firm offering lower prices. If there does exist a monopoly, the best it can do is reap monopoly rents under either situation.[67]

If the shoe manufacturer faces uncertainty concerning either the life of the durable or the frequency and degree of maintenance and repair needs (which in all likelihood it does), then leasing will provide a preferable means for obtaining the necessary equipment.[68] The preceding statement is based on the assumption that the shoe manufacturer has a concave von Neumann-Morgenstern utility function,

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[67]There are two cases in which leasing may allow a firm to earn greater profits than if it sold its equipment. The first case is if leasing enables the monopolist to credibly commit to sustaining high prices as is argued by Coase. See Ronald H. Coase, "Durability and Monopoly," The Journal of Law and Economics 15(1) (April 1972): 143-149. For a discussion of the Coase Conjecture and its application to the United Shoe Machinery case see notes 82-85 and accompanying text of this essay. The second case concerns the ability of the seller to provide desirable financing terms. For example, shoe manufacturers (especially smaller ones) may face higher interest rates for borrowing to purchase shoe machinery than United faces when it borrows. Such a differential in interest rates will allow United to serve as a lending institution to its consumers. Such an arrangement is to the benefit of both parties and may easily evolve into a system of leasing. Note, however, that in this case when the firm earns greater rents through leasing, buyers are made no worse off and are very likely to be better off.

[68]For a showing of how uncertainty in maintenance and repair induces a risk-averse shoe manufacturer to purchase a suboptimal amount of the durable, see notes 123-127 and accompanying text of this essay.

indicating risk aversion. Risk aversion on the part of the shoe manufacturer means that it would be willing to pay a premium for another party (such as United Shoe Machinery) to bear the risk. Shoe manufacturers are heavily reliant upon their machines and machine downtime is often very costly to a shoe manufacturer.[69] Furthermore, no manufacturer enjoys the prospect of premature obsolescence, which usually occurs in industries with fairly rapid technological change. A high rate of innovation results in what were once modern methods of production becoming out-of-date. As a result, those manufacturers with obsolete equipment will face higher production costs compared to those possessing up-to-date equipment. United's leasing policy provided for timely, high-quality maintenance and repair in addition to the return of equipment, without penalty, that was no longer needed.[70]

United, on the other hand, was probably less risk averse since it leased so many machines across a large number of shoe manufacturers. Moveover, it had greater knowledge about technological change. As a result, United was able to provide both the services of the durable and insurance to shoe manufacturers. Of course, United also benefitted from leasing. By providing insurance to risk-averse manufacturers, it earned some profit due to the fact that by the nature of risk aversion, manufacturers would be willing to pay a premium to United for bearing risk. The fact that United may have earned some rents from leasing does not translate into anticompetitive conduct on United's part. It is possible, as in the case just described, that both profits may be earned and greater efficiency be achieved simultaneously.

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[69]See note 126 and accompanying text of this essay.

[70]United permitted the return of machines which no longer sufficiently performed the operations for which they were intended without any penalty. It did, however, still collect the customary return fees. See United Shoe, 110 F. Supp. 295 (1953): 320. For further discussion of United's return policy, see notes 119-122 and accompanying text of this essay.

Effects of the 1953 ruling. The 1953 opinion required both parties report to the court as to the success of its ruling. This report was to occur on a specified date some 10 years in the future. On this date, the parties were also to be granted an opportunity to petition the court to modify its ruling. In 1965, the Government expressed its dissatisfaction with the results of the earlier ruling, stating that United Shoe Machinery retained a large share of the market. The Government thus petitioned for the dissolution of United into two companies. United meanwhile petitioned for less restrictive conditions under which to operate since its market share had declined and it believed the court had accomplished its goal. Judge Wyzanski denied both petitions in 1967.

In his ruling, Judge Wyzanski stated that he believed that the earlier ruling had been accomplishing what it had set forth to do: reduce United's market dominance, thereby moving the industry closer to "workable competition."[71] Among the factors cited as evidence were (1) United's market share declined from approximately 85% to 62%, (2) United's revenues decreased by 25% while those of its major competitors doubled, (3) in the 1953-1963 interval, more than 53,000 machines that had been leased were bought instead, (4) a second-hand market in United machines arose, and (5) shoe manufacturers testified that there existed ample competition to provide them with a choice of what machinery they desired "on the merits of the machines available."[72]

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[71]United Shoe, 266 F. Supp. 328 (1967): 330. "Workable competition" is a phrase used to describe an industry's market structure that would be acceptable from an efficiency standpoint since it is too idealistic to expect industries to achieve perfect competition. Scherer describes criteria for workable competition, but notes that there is much disagreement as to which criteria are necessary. The result is that the determination of what constitutes workable competition is somewhat subjective. Scherer, 41-44.

[72]United Shoe, 266 F. Supp. 328 (1967): 331-332.

The above factors, however, are not necessarily evidence that United's lease-only policy was a key factor in its success. There are several points to be made that demonstrate that the 1953 ruling may not have succeeded in reducing United's alleged monopoly power so much as it may have disabled superior efficiency achieved by United. First, although United's market share and revenues did decline, it still retained a relatively large market share, especially since the decree had been in effect for 10 years. Furthermore, the decrease in market share may not have been an indicator of consumers leaving United because they had been freed from the restrictions of a monopolist; rather, it may have served as an indication of United's decreased ability to provide what its consumers desired as efficiently and reliably as it did before the court placed restrictions upon it.

One other interesting theory worth mentioning is that of Worcester's concerning the viability of dominant firms.[73] Worcester argues that the dominant firm market structure is a short-run phenomenon, i.e., that it is not sustainable and will result in either competition, oligopoly, or monopoly. He further states that there must exist economies of scale in order for the market structure to become one characterized by oligopoly or monopoly. Applying this theory to United Shoe Machinery (assuming United Shoe was a dominant firm), there are two possibilities. First, the decrease in United's market share observed by the court in its 1967 ruling might have occurred in the absence of the earlier remedy as a result of United's losing its dominant firm status in the long run. This is supported by the fact that the rate of entry increased during the decade following the 1953 ruling even though most of the entrants were small firms.[74] Furthermore, the court stated,

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[73]Dean A. Worcester, "Why 'Dominant Firms' Decline," The Journal of Political Economy 64(4) (August 1957): 338-346.

[74]United Shoe, 266 F. Supp. 328 (1967): 332.

> United follows no practice and enjoys no significant advantage which
> could preclude or restrain competition by an enterprise of a size
> comparable with leading machinery companies in other industries.
> . . . The apparent reason why no such competitor has appeared is that
> compared with rates of return in other machinery markets, the rate of
> return in the shoe machinery market is unattractive.[75]

Hence, it may very well be possible that the 1953 court did not need to attempt to induce competition; United might have inevitably lost some market share to small firms, and entry by large firms may never have been merited since the market might not have been able to sustain more than one large firm. On the other hand, if United's market share would have persisted in the absence of the earlier remedy, then, according to Worcester's theory, United must have possessed economies of scale which is an acceptable means of acquiring market power.

The fact that a number of machines that had been previously leased were subsequently bought after the 1953 ruling does not serve as proof that the lease-only policy hindered competition or allowed United to reap monopoly profits. Nothing is said about the nature of the machines that were bought, i.e., if they were used in major or minor processes, the degree of significance in overall shoe production, and the like. The court did note that since the 1953 ruling, approximately 90% of United's machines were leased rather than sold. The court also noted that a "substantial number" of those machines were subsequently purchased.[76] The reason for initially leasing the more expensive machines was for financing purposes.[77] Consequently, there does not appear to be conclusive evidence that there was any real significance or meaning to the purchase of previously leased United machines.

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[75]Ibid., 334.

[76]Ibid., 332.

[77]Ibid.

While a second-hand market did arise in United machines, it does not appear to have provided substantial competition. Ten years after Judge Wyzanski's 1953 ruling, United was earning $22 million in revenues from leasing machines, $1.06 million in revenues from its sales of machines, and there was $3 million in revenues from the sale of all machines in the second-hand market. Much of the second-hand market, however, was composed of United machines.[78] As previously noted, it was stated in the 1967 ruling that United had a 62% share of the market in 1963. Assuming this market share was calculated inclusive of the second-hand market, then if United's market share is calculated based on these numbers without including the second-hand market, it is possible to evaluate, at least to some extent, how much "competition" this market did indeed provide. Calculating United's market share, omitting the second-hand market, results in a market share of 67.5%.[79] Hence, this analysis does not appear to lend much support for the belief that the second-hand market was important for competition.

Although there was favorable testimony by shoe manufacturers concerning the conditions for obtaining machinery in 1963, it is important to keep in mind that shoe manufacturers were also pleased with the service they received from United in 1953. Recall that there were no customer complaints concerning United's policies. Hence, customer satisfaction in 1963 does not indicate an improvement in the shoe machinery

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[78]Ibid.

[79]Since United's total revenues were $23.06 million and its market share was 62%, the total revenues in the industry must be

$$\$23.06 \div .62 = \$37.19.$$

Subtracting out the revenues from the second-hand market puts total revenues at $34.19 million. United's market share in this case is

$$\$23.06 \div \$34.19 = 67.5\%.$$

industry unless it could be shown that the happy customers of 1953 were even happier as a result of the change in United's policies.

Further evidence that the objections to United lay not in its policies but in its size is given by the Supreme Court's ruling addressing the Government's appeal.[80] The Court ruled that if the lower court had not achieved its goal of attaining "workable competition," then it should modify its ruling in order to obtain that result. While it did not make any specific prescriptions, the Court did seem to lean in favor of the Government. As a result, United later agreed to divest itself in such a manner that it would be left with a market share of 33% or less.[81] As previously noted, this unfortunate emphasis on market share is misleading and may result in inefficient outcomes.

The Coase Conjecture. The Coase Conjecture posits that a monopolist of a durable good will not be able to capitalize on its lone status in the industry by supracompetitively pricing the good. The reason for this is that the monopolist cannot credibly commit to the monopoly price in the long run. Consumers will recognize the fact that in the long run, in order to sell all of the good, the monopolist will have to bring the price down to the competitive level. In other words, once the monopolist has sold the goods to consumers willing to pay the monopoly price, it has an incentive to subsequently lower the price over time until the competitive quantity and price are reached. Cognizant of the monopolists' incentives, consumers will not be willing to pay a supracompetitive price.

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[80]United States v. United Shoe Machinery Corporation, 391 U.S. 244 (1967).

[81]See Robert H. Bork, The Antitrust Paradox: A Policy at War with Itself (New York, NY: The Free Press, 1993), 172.

One strategy Coase suggests a monopolist might employ to capture monopoly rents is to lease rather than sell the durable. If the lease terms are sufficiently short,[82] Coase contends that it is in the monopolist's interest to maintain the monopoly price since its behavior will affect its lessees' expectations concerning future periods. Hence, short-term leases may allow a durable-good monopolist to credibly commit to the maintenance of the monopoly price. The following analysis models the monopolist's incentive not to cheat by producing additional durables when the lease term is short.

Suppose that consumers, under the assumption that no future sales of the durable will be made, are willing to pay $1,000,000 for an infinitely-lived durable. This is equivalent to a lease payment of $100,000 per year at a discount rate of 10%. If the life of the lease is infinite, then leasing and selling are equivalent. On the other hand, suppose the lease payment is $100,000 and the term of the lease is one year. There is an incentive to produce additional durables if

$$\$100,000Q + \sum_{t=1}^{\infty} \frac{P_t}{(1+r)^t}(Q + \Delta Q_t) > \$1,000,000Q = \sum_{t=0}^{\infty} \frac{\$100,000}{(1.10)^t} * Q \quad (10)$$

where Q represents the monopolist's profit-maximizing quantity, ΔQ_t represents the additional quantity sold in period t, P_t represents the price in period t, and r is the discount rate. The left-hand side of inequality (10) represents the revenues earned by the monopolist when additional durables are produced. The right-hand side of inequality (10) represents the revenues earned when the monopolist does not produce additional durables. The only time the monopolist will have an incentive to produce and sell more of the durable is when inequality (5) holds: this is unlikely to occur, however, since price falls over time to the competitive level.

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[82]"Sufficiently short" is qualitative in nature. The lease term must be short enough so that it is reasonably distinguishable from a financed purchase.

Wiley, Rasmusen, and Ramseyer provide a detailed analysis that describes the conditions and restrictions involved in applying the Coase Conjecture to a specific industry.[83] They demonstrate that the shoe machinery industry did not adequately meet the conditions necessary to successfully earn monopoly rents under a leasing system as described by Coase.[84] Furthermore, Wiley, Rasmusen, and Ramseyer point out that even if the Coase Conjecture were applicable to <u>United Shoe Machinery</u>, the court's 1953 ruling actually ran counter to what Coase's theory would suggest as a remedy. Rather than banning all leasing, the court required that any machine offered for lease also be offered for sale. Additionally, the court ordered shorter lease terms which would have, in theory, promoted the earning of monopoly rents. Since it is the ability to commit to sustaining high prices that enable monopoly rents to be earned, short-term rather than long-term leases provide credibility. On the other hand, if the term of the lease is so long that it is as if a financed purchase has occurred, then the monopolist's incentive to maintain high prices will be reduced.[85] Hence, shorter lease terms should be considered more of a competitive danger according to Coase's theory.

<u>Summary of lease-only policy</u>. In evaluating United's leasing practices in 1953, Judge Wyzanski felt that the lease-only policy was instrumental in United's attaining a large market share, from which the court inferred market power. The preceding analysis, however, indicates otherwise. First, the evidence concerning United's role in the shoe machinery market during the decade after Judge Wyzanski's ruling lends little support to the assertion that the lease-only policy was detrimental to

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[83]See Wiley, Rasmusen, and Ramseyer, 718-730.

[84]See, however, notes 64-70 and accompanying text of this essay for a demonstration of how leasing can enable a manufacturer to earn rents due to uncertainty and risk aversion on the part of the buyers.

[85]See Coase, 145 and Wiley, Rasmusen, and Ramseyer, 725-727.

competition. In addition, the court should have considered more carefully what factors would have been necessary for this policy to allow United to exert monopoly power. Recall from the discussion of the Coase Conjecture that United's long lease terms may serve as an indication that its motivation in leasing was not to monopolize the manufacture of shoe machinery, for it is relatively short lease terms that Coase argued would allow monopoly rents to be earned. Perhaps, one of the most compelling points in favor of United's policy was "the testimony of the large number of shoe manufacturers who have already expressed their preference for leasing rather than buying machines."[86] Overall, it does not appear that United's lease-only policy was anticompetitive.

Lease provisions

In addition to objecting to the lease-only policy itself, the court was concerned with various clauses in the leases. The leases had both written provisions as well as lease-related practices with which the court was concerned. The key written conditions of the leases found to be restrictive were (1) the 10-year term of the lease, (2) a full-capacity clause, (3) a monthly minimum charge, and (4) a return charge. The court also found objectionable the following lease-related practices employed by United: (1) discriminatory enforcement of return charges, (2) a "commutation" charge, (3) a right-of-deduction fund, and (4) the provision of "free" service. Each of these components will be described and analyzed in turn.

Term of lease. The 10-year term of the lease proved to be one of the major antitrust concerns the court had regarding United Shoe's leasing policy. The court felt that the 10-year term was too long a commitment. The term of the lease in conjunction with the other lease provisions was believed to be too great a deterrent to both existing and potential competition. The long term of the lease, according to

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[86]United Shoe, 110 F. Supp. 295 (1953): 349.

Kaysen, was an obligation that prevented buyers from being available to purchase competitive machines.[87] With shorter terms, the court seemed to believe that shoe manufacturers would feel freer to try out alternative machines. In other words, competitors would have a greater opportunity to place their machines with more frequent lease expirations. As a result, the court ordered that the lease terms be reduced to five years. Hence, the 10-year lease term was viewed as both detrimental to competition among existing manufacturers as well as a barrier to entry inasmuch as it served as a deterrent to potential competition.

When examining the reasonableness of the lease term, one should examine the attitudes of those subject to the lease, i.e., the shoe manufacturers. If they have no complaints and do not feel oppressed, the firm offering the lease must be doing something right. There is direct evidence that the lease term was not designed for monopolization purposes, but that it was designed to meet the needs of buyers. United had an original lease term of 17 years. After the enactment of the Sherman Act, United offered the shoe manufacturers' a lease term of 7 years, but, to meet their preferences, United settled on a lease term of 10 years.[88] Hence, at the request of its customers, United increased its lease term. It seems unlikely that customers would have requested a detrimental lease term. Furthermore, it is important to keep in mind that United faced competition for the initial placement of virtually every machine that it supplied.

Another important point is that although shoe manufacturers may have had a long commitment to one manufacturer for any particular machine, outstanding leases did not all expire simultaneously. In fact, there was evidence that 10%-12% of the

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[87]Kaysen, 68.

[88]United Shoe, 110 F. Supp. 295 (1953): 319.

leases turned over annually.[89] In essence, each year presented new opportunities for competitors to place or introduce their machinery. Recall that there were approximately 1460 shoe manufacturers. Additionally, in 1947, United leased approximately 82,000 machines.[90] Assuming that United's market share was 85%,[91] then the total number of leased machines in 1947 may be approximated at 96,471.[92] At a 10-12% turnover rate, approximately 146-175 shoe factories were available to be outfitted per year.[93] In other words, there were approximately 9,647-11,577 lease expirations per year.[94] In this example, the share of the market not held by United is 15%, or approximately 14,461 leased machines.[95] As previously

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[89]See Kaysen, 55.

[90]Ibid., 28.

[91]The court stated that it believed United's market share to be as high as 85%. See United Shoe, 110 F. Supp. 295 (1953): 339.

[92]The following calculation gives the estimated total number of leased machines:

$$82,000 = .85x.$$

Solving for x, approximately 96,471 is obtained.

[93]The number of shoe factories available to be outfitted is obtained from the following calculations:

$$.10(1460) = 146$$

and

$$.12(1460) \approx 175.$$

[94]The number of lease expirations per year is given by the following calculations:

$$.10(96,471) \approx 9,647$$

and

$$.12(96,471) \approx 11,577.$$

[95]The number of leased machines not produced by United is given by the following calculation:

$$.15(96,471) \approx 14,471.$$

mentioned, United had at least 10 other American competitors as well as some foreign competitors who were successfully competing in the shoe machinery market.[96] For ease of calculation, suppose that United had a total of only ten competitors, each of which held equal market shares. Under this assumption, each competitor was able to survive and compete with United in the shoe machinery industry by leasing approximately 1,447 machines, which is only 12%-15% of the machines that were up for lease each year.[97] Hence, it appears that there was ample room for entry.

Even if the 10%-12% turnover was not high enough to sustain new entrants into the shoe machinery manufacturing industry, as is argued by Brodley and Ma,[98] the sales alternative advocated by many of the proponents of the court's decision does not appear to increase the opportunities for either entry or placement by competitors. Posner and Easterbrook point out that due to the durability of the machines, even if they were sold, the number of shoe manufacturers in the market for new machines would still be limited.[99] Furthermore, recall from the discussion of leasing versus selling that even 10 years after Judge Wyzanski's original ruling, United still possessed a substantial share of the market and still received the vast majority of its

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[96]Kaysen states that United faced as many as 22 competitors in major machinery and as many as 82 in minor machinery. Kaysen, 52-53.

[97]These percentages are obtained from the following calculations:

$$\frac{1,447}{11,577} \approx .12$$

and

$$\frac{1,447}{9,647} \approx .15.$$

[98]See Joseph F. Brodley and Ching-to Ma, "Contract Penalties, Monopolizing Strategies, and Antitrust Policy," Stanford Law Review 45 (May 1993): 1205-1206.

[99]See Posner and Easterbrook, 639.

revenues through leasing, indicating that making machines available for sale did not greatly alter the state of competition as previously believed.

Another consideration should be taken into account concerning the term of the leases. While 10 years may appear to be a long time for a consumer to commit to leasing, it may not truly be all that long a commitment given the durability of shoe machinery. While there was some dispute as to the economic life of shoe machinery, the conservative estimate was an average life of 10 years.[100] Hence, when a shoe manufacturer purchased a machine, the machine would very likely be functional for 10 years or more. Consequently, a 10-year lease term does not impose an unduly long commitment in an industry composed of such durable goods.

The court errs in two fundamental respects in its views concerning United's lease term. First, its belief that requiring any machine with a lease option to also have a sale option will promote competition is misguided, for a long-term lease is no more restrictive than a financed sale since both transactions reduce the number of buyers in the market. Second, the court's remedy of shorter lease terms also does not make sense. Recall from the discussion of the Coase Conjecture that shorter lease terms would hypothetically be more likely to promote monopoly rents. Hence, the court's analysis of the effects of a long lease term and its ensuing remedy lack sound economic reasoning.

Full-capacity clause and monthly minimum charge. The full-capacity clause and the monthly minimum charge are most appropriately discussed in conjunction with one another since they both concern machine usage and United's revenue dependency on that usage. The full-capacity clause required the lessee to use each United machine to its full capacity "upon all . . . footwear . . . of which such

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[100]Kaysen, 315.

machinery is capable of being used."[101] Once again, the court felt that this
stipulation deterred lessees of United machines from experimenting with competitive
machines. United's unwritten policy of enforcing this clause only when a competitive
machine was responsible for this requirement not being fulfilled reinforced the court's
belief.[102] Kaysen further argues that this clause restricted competition by causing
the employment of a competitive machine to be more expensive than a United
machine, if a shoe manufacturer chose to employ both, since the United machine had
to always be used to full capacity, allowing the competitive machine to pick up only
the surplus.[103]

United's history, however, does not indicate that this clause was employed
with the intent to monopolize the shoe machinery market. First, this policy had been
employed throughout United's history. Recall that the full-capacity clause had been a
provision in the Consolidated Company's leasing system before the original merger
occurred. Furthermore, in the 1917 case, United stated that the purpose of the clause
was to protect its revenues since the royalties it collected were based on machine
usage. The Supreme Court supported this clause in the 1921 case, ruling that such a
clause was legitimate for revenue protection.[104] Judge Wyzanski, however, viewed

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[101]United Shoe, 110 F. Supp. 295 (1953): 316.

[102]The court pointed out that "the full capacity clause is not considered by United
to have been violated unless the lessee fails to use the machine on work for which the
machine is capable of being used, and instead performs such work by using a
competitor's machine. In other words, it is not treated as a violation if the lessee
fails to use United's machines because he performs the work by hand, or because he
discontinues the type of operation for which the machine is capable of being used."
Ibid., 320.

[103]Kaysen, 70.

[104]See note 39 and accompanying text of this essay.

this clause, despite the above facts, as an exclusionary tool and ordered that it be eliminated as a provision.

The monthly minimum charge applied to 91 types of machines. Six of those machines had a unit charge rental which required that the lessee pay a certain amount to United for every pair of shoes operated on by that machine. The other 85 machines had both a unit charge plus a fixed monthly rental. United set a minimum number of pairs of shoes to be produced each month on those machines for which a unit charge was levied. When that minimum number was not met, lessees were required to pay a minimum monthly payment (as well as any applicable monthly rental). United's pricing scheme for these machines may be written as

$$R_i = F_i + U_i \tag{11}$$

where R_i represents the total monthly revenues from the ith machine, F_i is the fixed monthly rental fee for the ith machine (if applicable), and U_i represents the revenues earned from the unit charges levied on the ith machine. The unit charge component can be more precisely defined as

$$U_i = \begin{cases} M_i & \text{if } q_i < q_i^* \\ u_i q_i & \text{if } q_i > q_i^* \end{cases} \tag{12}$$

where M_i is the monthly minimum charge if the quantity of shoes operated on by the ith machine (q_i) is less than the minimum number of pairs specified by United (q_i^*) and u_i is the unit charge levied on each pair of shoes operated upon by the ith machine. The court calculated that the minimum charge would be approximately 10% of the unit charges if the machine in question were used to its full capacity. The court had virtually no comment as to any anticompetitive effects that the monthly minimum charge might have. In its remedy, however, the court did rule that United could set unit and/or monthly rental charges, but that it could no longer set such a minimum charge.

The court only considered the effects of these provisions that restricted the use of competitive machines. It would be ridiculous to argue that these provisions had no exclusionary effects, for naturally they did. But any time a firm uses one machine it necessarily excludes a rival machine. Moreover, it is important to consider all of the potential reasons for such provisions and then to determine which reasons appear to be the most likely, given the firm's history, behavior, and motivation. Hence, it is necessary to inquire as to whether United may have had reasons other than to acquire monopoly power for employing the full-capacity clause and the monthly minimum charge. One good reason already mentioned was for the protection of its revenues. Wiley, Rasmusen, and Ramseyer place this reason in the framework of risk reduction.[105] They argue that the full-capacity clause may have served as protection against exploitation of United's machine-usage system of payment.

Indeed, United's pricing mechanism may very well explain these two lease provisions. For 85 of its machine types, United employed a two-part tariff composed of a monthly rental fee plus a unit charge levied on every pair of shoes operated on by the machine in question.[106] Of those 85 machine types, 39 were among the "major" machine types and 46 were among the "minor" machine types.[107] Employing the figures provided by Kaysen, it is easily determined that approximately

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[105]See Wiley, Rasmusen, and Ramseyer, 716-717.

[106]See United Shoe, 110 F. Supp. 295 (1953): 319 and Kaysen, 33. The other methods of payment received by United (depending on machine type) were a monthly rental charge only, a unit charge only, an optional monthly charge or sale, and sale only. Kaysen, 33.

[107]These classifications were designated by the Government and disputed by United. Kaysen believes that overall (i.e., in spite of carelessness in classifying individual machines), the classification is useful. Kaysen, 32-33.

64% of the major machine types, 16% of the minor machine types, and 25% of all machine types were priced according to a two-part tariff.[108]

Before showing how this pricing mechanism may explain the full-capacity clause and the monthly minimum charge, it is useful to provide a definition of a two-part tariff in addition to exploring the incentives for its employment and evaluating the welfare effects of its use. A two-part tariff is basically just a pricing mechanism that is composed of a fixed fee plus a variable fee. This is the pricing mechanism described above, which may be written as

$$R_i = F_i + u_i q_i, \tag{13}$$

where the monthly rental charge (F_i) is the fixed fee and the unit charge (u_i) is the variable fee. Notice that under a two-part tariff, the total revenues to United and the total cost to the shoe manufacturer both increase as q_i increases. As q_i increases, however, the average total cost to the shoe manufacturer declines.[109]

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[108]The following table shows the percentage of machines subject to a two-part tariff:

Percentage of Machines Subject to a Two-Part Tariff

	Number Subject to Two-Part Tariff	Total Number of Machines	Percentage
Major	39	61	64%
Minor	46	281	16%
Overall	85	342	25%

The third column is obtained by dividing the first column by the second column. Data is from Kaysen, 33.

[109]Average total cost is just the sum of average variable cost and average fixed cost. Average variable cost in this case remains constant:

$$AVC = lq/q = 1.$$

Average fixed cost is just equal to

$$F/q$$

One of the key incentives for a seller to employ a two-part tariff is to increase revenues. If a firm has market power, a two-part tariff will allow that firm to earn profits at least as great as those that could be earned under uniform monopoly pricing. This tariff also results in a per unit or marginal charge that is less than that under a uniform monopoly price. As a result, welfare is higher under a two-part tariff than it is under a uniform monopoly price.[110]

United, however, is not the only party that benefitted from the employment of a two-part tariff. Kaysen points out that such a method of pricing a durable good provides the manufacturer with an incentive to continue to make improvements in shoe manufacturing machinery.[111] Since United's revenue stream is dependent upon the productivity of its machines, it has a vested interest in producing durable, high-quality machines. This, in turn, benefits the shoe manufacturers.

It could be argued that United's ability to price discriminate through a two-part tariff is evidence of market power. Once again, it is important to distinguish between market power which was unlawfully obtained and/or exercised and that which was obtained through legal means and was not unlawfully exercised. Recall that United's size was achieved mainly through mergers that were upheld as lawful in the 1917 case. Hence, the resulting question is whether United's practice of employing a two-

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and decreases as q increases. Hence, as q increases, average total cost,

$$F/q + 1,$$

must decrease.

[110]See Jean Tirole, <u>The Theory of Industrial Organization</u> (Cambridge, MA: The MIT Press, 1988), 143-148 for an analysis of the effect on profits and welfare of a two-part tariff.

[111]Kaysen, 190-191.

part tariff is evidence of its unlawful exercise of monopoly power.[112] There are at least two potential reasons as to why United employed a two-part tariff that do not indicate illegal monopolization and that may indicate efficiency.

The first reason, naturally, is the ability to generate greater revenues, but there are two cases in which such a motive should not lead to a finding of anticompetitive behavior. The first case concerns patents. If some of the machine types in question were protected by patents, United's monopoly power and its ability to price above cost were legally conferred. The exercise of such monopoly power through the employment of a two-part tariff rather than through a uniform monopoly price results in greater overall welfare. Second, United's size may have allowed it to achieve economies of scale that resulted in United's obtaining market power. In this case, a firm's ability to price above cost is the result of its efforts in improving its own efficiency, not of exclusionary conduct and, therefore, should not be condemned.

The second major reason for employing a two-part tariff may be to cover cost differences in servicing different shoe manufacturers.[113] The higher volume users

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[112]It should be noted that United's employment of a two-part tariff was not the type of price discrimination that would be condemned by the Robinson-Patman Act despite the fact that the rate of return to United from the same machine type varied from customer to customer. This is because the Robinson-Patman Act tends to condemn price _differences_ (as distinct from actual discrimination). For example, a two-part tariff charges the same fixed fee and the same per unit charge on a given machine type, but each customer's total cost varies with usage. Hence, the price charged is consistent across consumers, but the rate of return varies. We can, however, examine the two-part tariff from Judge Wyzanski's point of view as being potentially anticompetitive since it may indicate that United was charging a supracompetitive price. See Bork, 382-401 for a detailed analysis of the reasonableness of the antitrust laws concerning price discrimination.

[113]E. Thomas Sullivan and Herbert Hovenkamp, _Antitrust Law, Policy and Procedure: Cases, Materials, Problems_, 2d ed. (Charlottesville, VA: The Michie Company, 1989), 436.

of shoe machinery paid a higher total cost.[114] United may have recognized that in implicitly providing repair service and maintenance to all of its lessees without a separate charge, those lessees with greater usage of their machines would, in general, have greater servicing needs due to greater wear and tear on the machines. Hence, United would have incurred greater costs in servicing those users.[115] Finally, consider the detrimental consequences to United if its unit-charge machines were used only as back-up machines in the event of a breakdown of a dominant machine employed. If United had committed to a low monthly rental, then it would have run the risk of not collecting sufficient revenues in the absence of a protective clause. On the other hand, if it had opted for a high monthly charge, it could have lost some profitable, low-volume lessees.

In all of the above cases, United's pricing mechanism would be a legal and valid means for it to collect revenues. Therefore, any lease provisions, such as the full-capacity clause and the monthly minimum charge, protecting the collection of these revenues should be upheld in such cases. The court was remiss in not even exploring the potential reasons for United's inclusion of these two provisions.

Another question one might consider in determining United's motivation regarding the employment of the full-capacity clause and the monthly minimum charge deals with intent. United's willingness to waive the full-capacity clause for a 'reasonable time' in order to allow a lessee to try out a competitive machine[116] and its practice of allowing lessees to waive the monthly minimum charges for any four

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[114]See note 126 and accompanying text of this essay for a related discussion concerning United's use of a two-part tariff to cover the costs of servicing equipment.

[115]On a related note, it is also possible that if United was pricing supracompetitively, it was due to the fact that it offered a better package and/or a higher quality product for which consumers had a greater willingness to pay. For example, United provided service and training to its lessees without separate charge.

[116]Kaysen, 70.

months of the year in a way that was most advantageous to them[117] does not indicate exclusionary intent.[118] It seems highly unlikely that a firm determined to monopolize a market would be willing to waive provisions in order that its customers might try out competitive machines, even if that waiver is only for a limited time. Rather, it reveals confidence that its machines will prove to be superior. Had the court more carefully considered these departures from the written lease provisions, other potential reasons United may have had for employing these clauses, and United's history in employing the clauses, it seems likely that they would not have been condemned.

Return charge/discriminatory enforcement and "commutation" charge/right-of-deduction fund. The return charge, discriminatory enforcement of the return charge, the commutation charge, and the right of deduction fund are all provisions (some are written and some are unwritten) that deal with the manner in which United handled returns of its machines. The return charge was a written provision that required a fee, calculated by the court to be "somewhere between 30% and 40% of the manufacturing plus the developmental cost of the machine type," on any machine returned by the lessee.[119] The court objected to this charge, although it is not clear what specifically about this clause the court found objectionable. From the court's treatment of this clause, it is clear that the court considered the return charge to be

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[117]The four month waiver was an unwritten practice of United's. United allowed lessees to waive the monthly minimum charges during any 4 months of the year selected by the lessee, or, if none were selected, the 4 months most beneficial to the lessee.

[118]This is not to say, however, that United did not have its own interests at heart in granting these waivers. Such a benefit to shoe manufacturers represents nonprice competition. Note that this indicates competitive rather than anticompetitive behavior.

[119]United Shoe, 110 F. Supp. 295 (1953): 320.

one more factor contributing to what it felt was the deterrent effect of United's leasing system, i.e., deterring lessees from switching to competitive machinery.

The court was also very troubled by the discriminatory treatment of early returns. In general, it was United's policy to charge a higher return fee on United machines that were returned before the lease end and were to be replaced by competitor's machines than those that were not, e.g., those that were replaced because that work was to be done by hand. The means by which this mainly took effect was through what the court referred to as a "commutation" fee which charged those who returned United machines for replacement with competitors' machines 25% of the remaining monthly rental payments in addition to the regular return charge. (The regular return charge was composed of the fee set by United, the cost of any broken or missing parts, and the cost of delivery of the machine to Beverly, Massachusetts.) Additionally, if the returned machine had unit charges, the lessee also was required to pay "50% of the minimum monthly payment for the balance of the term of the lease after the waiver of 4 months, for each of the remaining years."[120] This commutative fee was set by a plan that commenced in 1935. The court believed that this practice was also for the purpose of preventing competitive shoe machinery manufacturers from being able to compete effectively with United machines already in place. The court considered this policy a "method of excluding from the shoe factories shoe machinery competitive with United."[121]

One further provision implemented by United that needs to be mentioned is the right-of-deduction fund. This was essentially an amortization plan. Lessees were informed of this plan in writing by United. The plan credited lessees a certain percentage of all unit charges, rental, and minimum charges. The credit could be

[120]Ibid.

[121]Ibid., 321.

used toward paying any return charges or minimum monthly payments. The court also considered this plan to contribute somewhat to the reluctance of shoe manufacturers to acquire competitive machines since the more United machines a manufacturer had, the greater the amount of credit that could be amassed as well as the greater the number of machines toward which that credit may be applied.

As already mentioned, the court was unhappy with all of the above provisions. In its remedy, the court did not allow for a termination fee and ruled that upon the early return of a machine, a lessee could be required to pay any rental fees accumulated thus far, the cost of broken or missing parts, and "no more than the equivalent of the monthly (not the unit) payments which would have been due had the lessee kept the machine for an additional three months."[122] The last part of this remedy does not seem fair to United given that it is a prescription for dealing with a breach of contract. The court further ruled that the discriminatory return policy (including the commutation fee) and the right-of-deduction fund be discontinued.

In the analysis of these provisions, it is important to first emphasize that the policies were implemented by United to deal with a lessee's desire to breach a contract. It is also important to note that the lessee entered into a contractual agreement with United upon signing the lease. Since it is clear there were competing shoe machinery manufacturers, it cannot be argued that such an agreement was made under coercion or without available alternatives. It is also interesting that the shoe manufacturers themselves did not complain of United's practices even when they had ample opportunity as witnesses in the 1953 case. It seems likely that if United's policy was unreasonable and imposed excessive penalties that the shoe manufacturers themselves would have brought suit or at least would not have chosen to do business with United.

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[122]Ibid., 352.

When evaluating the fines imposed for a breach of contract, one thing the judiciary tries to determine is whether such charges are compensatory or punitive. Charges are compensatory when they reflect the actual losses to the victim of the breach. Charges that exceed the actual damage are considered punitive. United's penalties, however, were not all that severe. First, United was willing to accept early returns of its machinery. Even with the stricter enforcement of return charges when lessees switched to competitive machinery, United required only a partial payment of the rentals that would have accrued had the lease obligations been fulfilled. Furthermore, United permitted lessees to use any credit accumulated under the right-of-deduction fund towards the payment of such charges. In order to assess fully the impact of United's return policy, the court should have compared the costs to the lessees under United's return policy to the costs they would have incurred had the machines been sold (i.e., a comparison of the financial effects both on the lessees and on United). The following example demonstrates such a comparison.

Suppose the life of a machine is ten years and the consumer decides to dispose of the machine after five years. The following equation compares the total cost of leasing a machine to the total cost of purchasing a machine:

$$\sum_{t=1}^{5} \frac{L_t}{(1+r)^t} + \frac{R_5}{(1+r)^5} = P_1 - \frac{S_5}{(1+r)^5}. \tag{14}$$

The left-hand side of equation (14) represents the cost of leasing the machine and returning it after five years and is equal to the net present value of the lease payments plus the present value of the return charge levied on the lessee. The right-hand side of equation (14) represents the cost of purchasing the machine and selling it in five years and is equal to the price paid to initially purchase the machine less the present value of the scrap value of the machine. In order to assess the reasonableness of United's return charge, such an analysis needs to be conducted. Obviously, if the

left-hand side of (14) is greater than the right-hand side, then the cost of leasing and returning the machine early is more expensive than purchasing the machine and selling it. The extent to which the two values differ would give an indication as to the degree that the return policy resulted in greater deterrence from disposing of United equipment than if that equipment had been purchased. There is, of course, a return charge that makes the two equivalent. There is no indication that the court did such an analysis. The court's neglect in conducting such an analysis calls into question its objection to United's return policy.

"Free" service. Another practice of the United Shoe Machinery Corporation that the court found objectionable was its unwritten policy of providing service for its leased machines without separate charge. Kaysen notes that this policy was, in fact, one that had been employed for a long time.[123] The reason for this system may very well have to do with the nature of shoe manufacturing itself. Since the manufacture of shoes involves the use of several machines used in conjunction with one another, a breakdown of machinery could lead to substantial losses. As a result, shoe manufacturers are terribly reliant upon their machines.[124] United Shoe Machinery provided shoe manufacturers with high quality service including general maintenance, support service, and information. The court noted, "in all respects, the service rendered by United is uniformly of excellent quality. It is promptly, efficiently, and courteously rendered."[125] Furthermore, shoe manufacturers seemed pleased with this policy, and they did not indicate any objections as to the "bundling" of service with the leased machines.

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[123]Specifically, Kaysen states, "this system dates back to the early history of the industry." Kaysen, 72.

[124]United Shoe, 110 F. Supp. 295 (1953): 340.

[125]Ibid., 322.

Despite the high quality service provided and customer satisfaction, this practice of "free" service contributed to the court's finding of anticompetitive behavior on the part of United Shoe Machinery. The court felt that this practice prevented independent service organizations from forming. As a result, the court argued, entrants would have to be able to provide service in order to be successful. The court believed that service charges that were separate from the rental charges on the machines would result in the formation of independent service organizations that presumably would allow easier entry into the shoe machinery market. Consequently, United Shoe Machinery's practice was considered a barrier to entry.

The court also argued that since separate charges for service were not levied, the policy was more advantageous to some shoe manufacturers than to others. The foundation for this argument was that the service needs across shoe manufacturing plants seemed to be unequal. Some shoe manufacturers were found to exhibit consistently high service needs while others exhibited consistently lower service needs. Hence, the court felt that those shoe manufacturers that demonstrated higher service needs reaped greater advantages from United Shoe's service policy than those demonstrating lower service needs.[126] As previously pointed out, United employed a two-part tariff pricing mechanism for many of its machines which may have reflected cost differences to United in serving various customers. Hence, it may be that those customers with lower service needs did, in fact, have a lower total cost under United's leases. Furthermore, it seems probable that if those customers with low service needs were not receiving adequate services for the amount they paid, then they would have gone to other shoe machinery manufacturers. The court, however, did not consider such possibilities and ultimately ruled that while United Shoe Machinery should be allowed to provide service, it may only do so by having charges

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[126]Ibid., 322-323.

for service separate from rental charges. The deficiency in the court's analysis is once again the fact that it did not consider any efficiency reasons that United may have had concerning this policy.

United Shoe Machinery's service policy was not anticompetitive. Basically, United was charging a life-cycle price: a single rental fee was agreed upon by the shoe manufacturers to cover both the leased machinery and any maintenance, repair, or informational services needed. It is the flow of services that the durable provides that the customer cares about, rather than the physical good itself. As a result, the life-cycle price, the total cost of obtaining those services over the life of the durable (or over a specified period of time in the case of leasing), is the price that is relevant. The customer, therefore, should be indifferent about the components of that price as long as the total cost of the flow of services in present value terms remains unchanged.

As previously mentioned, it is assumed that shoe manufacturers are risk-averse. The costliness of machine downtime has also been emphasized, indicating the dependence of manufacturers on their machines. United Shoe Machinery's policy may have served to reduce uncertainty by incorporating the costs of correcting breakdowns or other problems in the lease rental. As a result, the shoe manufacturers do not face uncertain maintenance and repair costs. The following analysis will demonstrate how such a practice actually promotes efficiency.

The cost to a shoe manufacturer for a particular machine in any one rental period can be expressed as

$$R = r + m \tag{15}$$

where r represents the per period rental rate and m represents the per period maintenance. Hence, the total fee paid by the shoe manufacturer for the use of leased machinery is

$$\tilde{R} = \sum_{t=0}^{T} \sum_{i=1}^{n} r_{it} + \sum_{t=0}^{T} \sum_{i=1}^{n} \tilde{m}_{it} \qquad (16)$$

where r_{it} represents the rental rate on the ith machine in the tth period, m_{it} represents the maintenance on the ith machine in the tth period, T represents the number of rental periods, n represents the number of leased machines (where all of the machines are not necessarily of the same type), and the tildes indicate the variables subject to uncertainty.

Maintenance for any particular machine may be defined as

$$\tilde{m}_{it} = m_{it} + u_t \qquad (17)$$

where m_{it} represent maintenance under certainty and u_t is a random variable. The probability function for u_t is $f(u_t)$, and the expected value of u_t is zero:

$$E[u_t] = \int_{x}^{\infty} u_t f(u_t) du_t = 0. \qquad (18)$$

For $\tilde{m}_{it}$ to be nonnegative, $x \geq -m_{it}$ is required.

Suppose that a shoe manufacturer's production function is

$$Q = Q(k_1,...,k_n,L) \qquad (19)$$

where k_i, $i = 1,...,n$, is the ith capital input (e.g., a particular shoe manufacturing machine), and L represents the labor employed. The present value of profits for a shoe manufacturer are represented by

$$\Pi = \sum_{t=0}^{T} (P_t Q_t)\delta_t - \sum_{t=0}^{T} \sum_{i=1}^{n} (r_{it} k_{it})\delta_t - \sum_{t=0}^{T} \sum_{i=1}^{n} (m_{it} k_{it})\delta_t - \sum_{t=0}^{T} (w_t L_t)\delta_t \qquad (20)$$

where

$$\delta = \frac{1}{(1+j)^t} \tag{21}$$

and j is the discount rate. Assuming the shoe manufacturer maximizes its expected

utility of profits, the objective function becomes

$$\text{Max} E[U(\tilde{\Pi})] = E[U(\sum_{t=0}^{T} (P_t Q_t)\delta_t - \sum_{t=0}^{T} \sum_{i=1}^{n} (r_{it} k_{it})\delta_t \\ - \sum_{t=0}^{T} \sum_{i=1}^{n} (\tilde{m}_{it} k_{it})\delta_t - \sum_{t=0}^{T} (w_t L_t)\delta_t)] \tag{22}$$

where E is the expectations operator and U represents von Neumann-Morgenstern

utility. The resulting first-order condition with respect to the ith capital input is

$$\frac{\partial E[U(\tilde{\Pi})]}{\partial k_i} = E[(U'(\tilde{\Pi}))(\sum_{t=0}^{T} ((P_t + Q_t \frac{\partial P_t}{\partial Q_t})\frac{\partial Q}{\partial k_i} - r_{it} - \tilde{m}_{it})\delta_t)] = 0. \tag{23}$$

Rewriting equation (23), we obtain

$$E[U'(\tilde{\Pi}) \sum_{t=0}^{T} (MRP_{it} - r_{it} - \tilde{m}_{it})\delta_t] = 0 \tag{24}$$

where MRP_{it} is the marginal revenue product of the ith capital input in period t.

Rewriting equation (24) results in

$$E[U'(\tilde{\Pi})]E[PV(MRP_{it} - \tilde{m}_{it})] - cov[U'(\Pi, PV(\tilde{m}_{it}))] - PV(r_{it}) = 0 \tag{25}$$

or

$$PV(MRP_{it}) - PV(r_{it}) - E[PV(\tilde{m}_{it})] = \frac{cov[U'(\Pi), PV(\tilde{m}_{it})]}{E[U'(\tilde{\Pi})]}. \tag{26}$$

The first term on the left-hand side of equation (26) represents the present value of

the marginal revenue product of the ith machine. The other two terms on the left-hand side of the equation represent the present value of the expected marginal life-cycle cost of the ith machine. By examining the right-hand side of the equation, it is possible to ascertain the effect of uncertainty on a risk-averse shoe manufacturer.

Suppose the cost of maintenance for any machine increases. This, of course, means that $PV(\tilde{m}_{it})$ will increase. Furthermore, an increase in maintenance will cause profits to decrease which has the effect of increasing $U'(\tilde{\Pi})$. Hence, the covariance term on the right-hand side of the equation is positive. Since $E[U'(\tilde{\Pi})]$ is also positive, the entire right-hand side of equation (26) is positive. This indicates that a risk-averse shoe manufacturer equates the present value of the marginal revenue product for the ith machine to an amount that is greater than the expected life-cycle cost of that machine. As a result, the number of machines purchased by the shoe manufacturer is less under uncertainty than under certainty. Another implication of this result is that the shoe manufacturer will pay a premium in order to shift risk to United. This, of course, will be reflected in the price paid for using the machines.

The preceding analysis demonstrates how inflexible pricing rules in a stochastic environment can lead to an inefficient allocation of resources. Under the assumption that United was less risk-averse than individual shoe manufacturers, United Shoe Machinery's policy of including regular maintenance and prompt repair without separate charge shifted the burden of risk from the shoe manufacturer to United. Such an assumption is reasonable since United leased many machines to numerous shoe manufacturers whereas an individual shoe manufacturer is more heavily reliant on any particular machine. While United may very well have benefitted from this risk-shifting due to increased demand and the premiums paid by the manufacturers, this also may have been the most effective way to reduce uncertainty and achieve a more efficient outcome. For example, the removal of uncertainty results in $PV(\tilde{m}_{it})$ = $PV(m_{it})$. The shoe manufacturer now knows what

its costs will be for any given output. Hence, the covariance term in equation (26) becomes zero, resulting in

$$PV(MRP_{it}) - PV(r_{it}) - PV(m_{it}) = 0. \tag{27}$$

From equation (27), it is easily seen that the shoe manufacturer equates the present value of the marginal revenue product of the ith machine to the present value of the marginal life-cycle cost of the ith machine. The socially efficient quantity of machines is leased: this is greater than the quantity leased under uncertainty. Hence, the court's insistence that an independent service market should be "allowed" to form for the sole purpose of encouraging entry of new businesses is not sound policy. Perhaps no independent service market existed because that was not the most efficient way for repair services to be rendered in this industry. Indeed, it is noted in the case that "no system that has been suggested would be likely to be superior from a technological viewpoint."[127]

Conclusion

In 1953, Judge Wyzanski had to decide whether the United Shoe Machinery Corporation had illegally monopolized the shoe machinery market. At the outset of his opinion, Judge Wyzanski stated,

> it should be noted that by far the most important means by which
> United originally achieved its share of the market and its market power
> was that set of transactions in 1899 by which it brought under one
> corporate control the business of the so-called constituent companies.
> But these transactions have already been adjudicated in favor of United,
> and are not now in issue. The issues of fact now under review relate to
> how United's market power has been maintained and exercised since
> the earlier adjudication.[128]

This passage of the case is very important, for it signifies that United's actual size should not have been a factor; rather, that United's behavior was relevant in the 1953 decision. It is somewhat tricky to assess whether any market power that United had

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[127]Ibid., 322.

[128]Ibid., 307.

as a result of its market share was exercised unlawfully. The court determined that market power had been unlawfully exercised. The court's basis for doing so, however, rested on its belief that United's practices enabled it to retain its market power. If United's market share and, hence, its market power were originally acquired legitimately as indicated by the above passage, then its maintenance through normal competitive actions should not have been condemned.

Recall that the test for a finding of illegal monopolization requires the following:

(1) the possession of monopoly power in the relevant market and
(2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historical accident.[129]

Although these two components for proving illegal monopolization were enunciated in Grinnell after the 1953 United Shoe ruling, it is clear that Judge Wyzanski was concerned not only with a finding of market power, but also with a finding of the illegal maintenance of that power. According to Judge Wyzanski, the first component was satisfied. The initial acquisition of market power, however, was deemed lawful. The resulting issue, therefore, is whether United's "monopoly" status was maintained unlawfully. The court concluded that United was guilty regarding intent since it willfully carried out policies and practices that allowed it to maintain its position in the market. These policies and practices, however, have been analyzed and have been found (1) to meet the needs of the shoe manufacturers (e.g., the lease term), (2) to have efficiency-enhancing results (e.g., the provision of service), or (3) to have reasons that may be classified as "good business practice" (e.g., the full-capacity clause).

The prominence of United Shoe as an example of illegal monopolization and the intent component of the Grinnell test for illegal monopolization raise serious

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[129]Grinnell, 384 U.S. 563 (1966): 570-571.

concerns regarding the judiciary's evaluation of illegal monopolization. The key concern is that business entities with large market share will be fearful of engaging in certain practices that would be considered normal competitive behavior if carried out by smaller firms. Consequently, firms that possess superior efficiency, foresight, or innovative capabilities may be discouraged from making advances that benefit both industry and consumers.

MONOPSONY IN THE HEALTH INSURANCE INDUSTRY

Introduction

Monopsony is the purchasing-side analog of monopoly. In its pure form, monopsony is a market structure that is characterized by a single purchaser of a good. Analyses of monopsony have only just recently begun to make headway in the law and economics literature.[1] Although economists have recently focussed more attention on monopsony as a market structure with important efficiency considerations, the judiciary has not fully incorporated the analysis of this market structure and its effects on efficiency in decisions dealing with market power in the hands of buyers. As a result, many cases have been and continue to be at risk of being decided incorrectly with respect to the desired results.[2]

In the following section, a thorough description of monopsony is given. The structural condition of monopsony is described, and the resulting effects on efficiency, including the effects on the final consumer, are highlighted. Next, suggestions for the incorporation of monopsony analysis into judicial decision making are given. Earlier judicial decisions involving buying power in the health insurance industry are then

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[1] For a comprehensive coverage of this literature, see Roger D. Blair and Jeffrey L. Harrison, Monopsony (Princeton, NJ: Princeton University Press, 1993).

[2] Although the goals of antitrust have been subject to considerable debate, it is generally accepted that the antitrust laws were enacted to protect the competitive process (not individual competitors) and consumer welfare.

examined, contrasting the actual outcome of each case with what might have been the outcome had the court correctly considered the potential for anticompetitive harm due to monopsony power. Finally, the implications of the analysis of monopsony power for antitrust enforcement in the health care industry are presented. The risks involved in not adequately recognizing monopsony power as an antitrust concern are emphasized.

Economic Analysis of Monopsony

This section develops a model of monopsony.[3] The conditions for profit maximization are given, and the effects of monopsony on allocative efficiency and consumer welfare are analyzed. It is shown that the monopsonist's profit-maximizing solution results in a reduction in both allocative efficiency and consumer welfare. In this analysis, two cases will be examined. In the first case, a firm, possessing monopsony power in its input market while facing competition in its output market is examined. In the second case, firm with market power in both its input and output markets is analyzed. In addition, analyses of collusive monopsony and of monopsony as it pertains to the dominant firm market structure are provided.

Competition in the Output Market

Suppose O.J., Inc. is the only buyer of oranges in Manatee County, Florida. Furthermore, suppose O.J., Inc. uses oranges as the sole input in the production of

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[3]For other analyses of monopsony, see Blair and Harrison, footnote 1 above, and James M. Henderson and Richard E. Quandt, Microeconomic Theory: A Mathematical Approach, 3d ed. (New York, NY: McGraw-Hill Book Company, 1980), 190-192.

orange juice, O.J., Inc.'s output, which faces competition throughout the state of Florida. Hence, the production function faced by O.J., Inc. is

$$Q = F(x) \tag{1}$$

where Q represents the firm's output and x represent the quantity of oranges. Profits for the firm are, of course, equal to the difference between total revenue and total cost:

$$\Pi = P * Q - w(x)x \tag{2}$$

where P is the competitive price of orange juice[4] and w(x) represents the price of the input, oranges. It is assumed that the price of oranges is an increasing function of the quantity of oranges employed in the production of orange juice:

$$\frac{dw(x)}{dx} > 0. \tag{3}$$

The first-order condition for a maximum of profit is

$$\frac{d\Pi}{dx} = P * \frac{dQ}{dx} - \left[w(x) + x * \frac{dw(x)}{dx} \right] = 0, \tag{4}$$

which can be written as

$$P * \frac{dQ}{dx} = w(x) + x * \frac{dw(x)}{dx}. \tag{5}$$

The left-hand side of equation (5) represents the value of the marginal product of

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[4]Since the firm faces competition in its output market, it does not have the ability to influence the price at which it sells its output; the firm will sell its output at the market-determined price.

oranges, and the right-hand side represents the marginal input cost of oranges.[5]
Consequently, profit maximization occurs when the value of the marginal product of
the input and the marginal cost of the input are equal.

The second-order condition for a maximum is

$$\frac{d^2\Pi}{dx^2} = P * \frac{d^2Q}{dx^2} - \frac{dw(x)}{dx} - \frac{dw(x)}{dx} - x * \frac{dw^2(x)}{dx^2} < 0. \tag{6}$$

Hence,

$$P * \frac{d^2Q}{dx^2} < 2 \frac{dw(x)}{dx} + x * \frac{dw^2(x)}{dx^2}. \tag{7}$$

Inequality (7) indicates that at the point of profit maximization, the rate of change of
the marginal input cost of oranges must be greater than the rate of change of the value
of the marginal product of oranges.

The monopsonist's profit-maximization problem is depicted graphically in Figure
4-1 below. The first-order condition for a maximum given in equation (5)
corresponds to point A in Figure 4-1. At point A, O.J., Inc. will purchase x_m
oranges and will pay a price of w_m. It is useful to note that in an input market for
oranges characterized by perfect competition, an orange juice producer would
purchase x_c oranges at a price of w_c. It is clear that under competitive conditions,

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[5]Since the total input cost is

$$TIC = w(x) * x,$$

the marginal input cost is

$$MIC = \frac{dTIC}{dx} = w(x) + x * \frac{dw(x)}{dx}.$$

there is a greater employment of oranges and there is a higher price paid to that input. The loss in welfare due to monopsony pricing is given by area ABC.
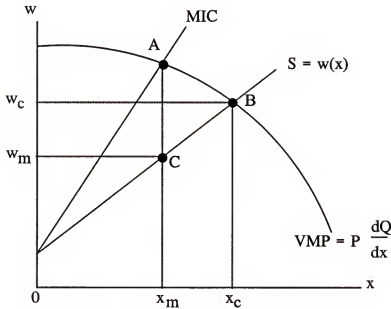

Figure 4-1
Welfare Loss Under Monopsony

It is important at this point to discuss the effects of monopsony on the final consumer. It is obvious that monopoly pricing is deleterious to consumer welfare since price is above the competitive level and the quantity sold is below the competitive level. Similarly, profit maximization under monopsony results in a reduction in the quantity purchased relative to the competitive solution. But, input prices are <u>lower</u> under monopsony. At first blush, monopsony power does not appear

harmful since it allows firms to obtain inputs at lower cost. Afterall, if a firm can reduce its costs, then it can pass those cost savings on to its consumers; this, however, does not actually occur. The following simple analysis reveals why consumer welfare is not enhanced when a monopsonist extracts lower prices for an input.

Recall that O.J., Inc. maximized profits by equating its value of the marginal product of oranges to the marginal input cost of oranges, or

$$VMP = P*MP = MIC. \tag{8}$$

Solving for price, the following is obtained:

$$P = \frac{MIC}{MP}. \tag{9}$$

Since O.J., Inc. faces competition in its output market, it produces where price is equal to marginal cost. Hence, MIC/MP must be O.J., Inc.'s marginal cost. Alternatively, recall that the marginal product of an input measures the increase in output that an infinitesimal increase in the employment of that input yields. The marginal input cost measures the increase in total cost resulting from an infinitesimal increase in the employment of the input. As a result, the ratio of the marginal input

cost to the marginal product of an input measures the increase in cost that an infinitesimal increase in output causes: this is the definition of marginal cost.[6]

In order to compare the monopsonistic result in equation (9) with the fully efficient one, we will now assume that O.J., Inc. faces competition for the purchase of oranges. In a perfectly competitive input market, the marginal input cost of oranges is equal to the price paid for oranges. Under these circumstances, the firm maximizes profits by employing oranges to the point where their price equals the value of the marginal product:

$$w = MP*P. \tag{10}$$

This, of course, can be written as

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[6]More formally,

$$TC = w(x)x$$

where TC is the total cost of production. The derivative of total cost with respect to quantity is

$$\frac{dTC}{dQ} = \left[w(x) + x*\frac{dw(x)}{dx} \right] * \frac{dx}{dQ}$$

where the left-hand side is marginal cost, the bracketed term is the marginal input cost, and the final term is the reciprocal of the marginal product.

$$P = \frac{w}{MP}. \tag{11}$$

Now, O.J., Inc.'s marginal cost is given by w/MP.[7] In order to determine the effects of monopsony on the final consumer, the following comparison must be made:

$$\frac{MIC}{MP} \overset{>}{<} \frac{w}{MP}. \tag{12}$$

Recall that

$$MIC = w(x) + x * \frac{dw(x)}{dx} \tag{13}$$

and

$$\frac{dw(x)}{dx} > 0. \tag{14}$$

Hence,

$$MIC > w(x) \ \forall \ x > 0. \tag{15}$$

Therefore,

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[7]Since TC = wx,

$$\frac{dTC}{dQ} = w * \frac{dx}{dQ} = \frac{w}{MP}$$

because

$$\frac{dx}{dQ} = \frac{1}{MP}.$$

$$\frac{MIC}{MP} > \frac{w}{MP}, \tag{16}$$

and O.J., Inc.'s marginal cost curve is higher when it possesses monopsony power than when it faces competition for the purchase of oranges. Since O.J., Inc.'s output decision is based on its marginal costs, higher marginal costs result in a lower quantity sold by O.J., Inc. Additionally, since O.J., Inc. faces competition in the output market, the reduction in output will not influence price: O.J., Inc. will sell its output at the market-determined price. Hence, consumers fare no better when O.J., Inc. has monopsony power than when it faces competition for the purchase of oranges.

Monopoly Power in the Output Market

Now, we can examine the case in which O.J., Inc. has monopsony power in the input market for oranges and monopoly power in the market for its output, orange juice. O.J., Inc.'s maximization problem is

$$\max_x \Pi = P(Q)*Q - w(x)*x. \tag{17}$$

The first-order condition for a maximum is

$$\frac{d\Pi}{dx} = \left(P(Q) + Q\frac{dP(Q)}{dQ}\right)*\frac{dQ}{dx} - \left(w(x) + \frac{dw(x)}{dx}*x\right) = 0. \tag{18}$$

Algebraic manipulation of equation (18) generates

$$P(Q) + Q\frac{dP(Q)}{dQ} = \frac{\left(w(x) + \frac{dw(x)}{dx}*x\right)}{\frac{dQ}{dx}}. \tag{19}$$

The left-hand side of equation (19) is just O.J., Inc.'s marginal revenue. The right-hand side is the marginal input cost of oranges divided by the marginal product of oranges, which we noted from equation (9) represents the firm's marginal cost. Therefore, the familiar result that profit maximization occurs where marginal revenue and marginal cost are equal is obtained.

It is now possible to examine the effects of O.J., Inc.'s monopsony and monopoly power on final consumers. As shown earlier, monopsony power has the effect of raising the marginal costs faced by the firm. From equation (19), it is apparent that an increase in marginal costs results in a higher level of marginal revenue at the point of profit maximization. A higher level of marginal revenue indicates that there is a reduction in the profit-maximizing level of output under monopsony. Since O.J., Inc. has market power in its output market, it faces a downward sloping demand curve; hence, a reduction in the profit-maximizing level of output leads to increased prices for consumers. As a result, in this case, consumers are actually <u>worse off</u> when O.J., Inc. has monopsony power than when it faces competition for the purchase of oranges.

The preceding analyses demonstrate that lower input prices obtained by firms with monopsony power do not result in increased welfare for the ultimate consumer. Monopsony power results in a restriction of output. Furthermore, output prices do

not fall as a result of lower costs, and may, in fact, rise due to the simultaneous

exertion of both monopsony power and monopoly power.

Collusive Monopsony

One of the interesting aspects of an insurance company is that any buying power

that it possesses is due to its representation of a significant number of subscribers.

While it would be incorrect to classify this aggregation of individual subscribers'

purchasing power as collusive in nature (since there is no interaction among the

subscribers), it is instructive to examine the exercise of monopsony power by

colluding firms.[8] Such an analysis will prove useful in subsequent discussions

concerning the unique structure of insurance markets.

Suppose that instead of having O.J., Inc. as the sole purchaser of oranges in

Manatee County, Florida that there are multiple purchasers of oranges. Further,

suppose that these firms agree to collude on their purchases of oranges in order to

extract a lower price from the citrus growers. As a group, the colluding parties will

want to restrict their purchases in order to achieve maximum profits. For the

purposes of this analysis, it is assumed that all of the firms in the cartel are producers

of orange juice and are identical in nature.[9] Total profits are equal to the total

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[8]For a less technical treatment of collusive monopsony, see Blair and Harrison, 42-46. For analyses of collusive monopoly, see Henderson and Quandt, 201-202 and Hal R. Varian, Microeconomic Analysis, 2d ed. (New York, NY: W. W. Norton & Company, Inc., 1984), 100-101.

[9]The analysis becomes more complicated when differences among purchasers is allowed. In such a case, the analysis can be conducted from the viewpoint of a multi-plant firm that possesses monopsony power.

revenues less the total costs of the firms:

$$\Pi_T = \sum_{i=1}^{n} \Pi_i = \sum_{i=1}^{n} \left(P * Q_i - w(x)x_i \right) \tag{20}$$

where Π_i represents the profits of the ith firm and n is the number of firms in the cartel. Hence, the cartel's profit maximization problem is

$$\max_{x_i} \left[\sum_{i=1}^{n} P * Q_i - w\left(\sum_{i=1}^{n} x_i \right) x_i \right]. \tag{21}$$

The first-order conditions are

$$\frac{\partial \Pi_T}{\partial x_i} = R_i'(x_i) - w'(\sum_{i=1}^{n} x_i) = 0 \tag{22}$$

where

$$R_i = P * Q_i. \tag{23}$$

Hence,

$$VMP_i = MIC. \tag{24}$$

Thus, profit maximization requires that the value of the marginal product of oranges for each firm be equal to the marginal input cost of oranges.[10] Figure 4-2 below depicts the cartel's optimization problem. For ease of exposition, the values of the marginal product for the firms are assumed to be identical. In Figure 4-2, the profit-

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[10]When firms are not identical, their value of the marginal product curves will differ. Hence, the level of purchases set by the cartel may vary from firm to firm.

maximizing point is located where the total value of the marginal product curve

(ΣVMP) is equal to the marginal input cost curve (MIC) for the industry. Profit

maximization results in a total of x_T oranges being purchased at a price of w^*. Each

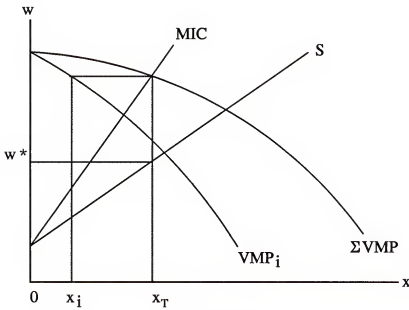firm purchases x_i oranges. The firms can then divide their combined profits.[11]

Figure 4-2
Collusive Monopsony

The benefits of collusion to an individual firm is portrayed in Figure 4-3 below.

The solution (w_c, x_c) indicates the price paid for and the quantity of oranges purchased

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[11]When the firms have different value of the marginal product curves, profits will not be divided evenly. The cartel will have to agree upon what share of profits each member will receive.

by the firm under competitive conditions. Under collusion, the wage rate is driven down to w^*. Each firm must reduce its purchases to x_i in order for the cartel to maximize total profits. Hence, the individual firm loses area S but gains area T. As a result, the profits to collusion are equal to area T less area S.[12]
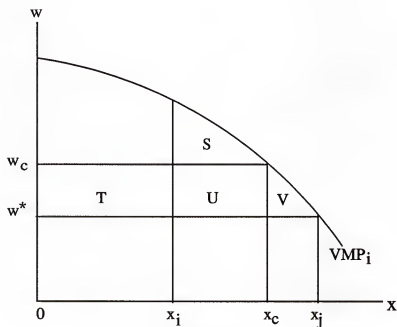

Figure 4-3
Effects of Collusion on the Firm

There are two main obstacles to the maintenance of the profit-maximizing solution. The first concerns entry. Lower prices paid for oranges cause average cost

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[12]Naturally, area T must be greater than area S in order for collusion to be profitable. Of course, there always exist (x,w) combinations along the firm's value of the marginal product curve such that area T will be greater than area S.

to fall. Consequently, if there are no barriers to entry, other firms will be attracted by the lower input prices. As entry occurs, the price of oranges will be driven up toward w_c, reducing the profits to collusion.

The other key obstacle is cheating on the purchasing-restriction agreement by the individual firms. To better understand the incentive to cheat, an alternative representation of the profit-maximization problem in equation (21) is in order. If the cartel is composed of only two firms, the profit-maximization problem becomes

$$\max_{x_1, x_2} \left[R_1(x_1) + R_2(x_2) - w(x_1 + x_2)[x_1 + x_2] \right]. \tag{25}$$

The first-order condition results in the following equalities:

$$R_1'(x_1) = VMP_1 = \frac{\partial w}{\partial x}[x_1 + x_2] + w(x_1 + x_2) \tag{26}$$

and

$$R_2'(x_2) = VMP_2 = \frac{\partial w}{\partial x}[x_1 + x_2] + w(x_1 + x_2). \tag{27}$$

Now, it is possible to examine firm 1's incentive to cheat. From equation (26), we obtain

$$VMP_1 - w(x_1 + x_2) - \frac{\partial w}{\partial x}x_1 - \frac{\partial w}{\partial x}x_2 = 0. \tag{28}$$

Rearranging equation (28) results in

$$VMP_1 - w(x_1 + x_2) - \frac{\partial w}{\partial x}x_1 = \frac{\partial w}{\partial x}x_2. \tag{29}$$

The left-hand side of equation (29) is just firm 1's marginal profits under the collusive

solution if firm 2 does not alter its purchases. Since $\partial w/\partial x > 0$, firm 1's marginal profits are positive. Hence, under the assumption that firm 2 will keep its purchases constant, firm 1 will have an incentive to increase purchases, and thereby production, in order to increase its profits. Naturally, firm 2 has the same incentive.

This incentive to cheat is represented in Figure 4-3 above. For the individual firm, profits are maximized when the marginal input cost of oranges is equal to its value of the marginal product of oranges. Since each firm views w^* as given, this point of profit maximization occurs at (w^*, x_j). Indeed, by cheating, the firm gains area $S+U+V$ (relative to the output x_i). Hence, each firm has an incentive to cheat by expanding its purchases. Clearly, such action, if taken by all of the colluders, will cause the collusive profits to disappear.

The Dominant Firm and Monopsony

Pure monopsony is not a common occurrence. It is not so unusual, however, for a market to be characterized by several firms, one of which holds a dominant purchasing position in the industry. As a result, it is useful to examine how monopsony power is exercised by a dominant firm.[13][14] In the following analysis, it

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[13]See Roger D. Blair and Lawrence W. Kenny, Microeconomics with Business Applications (New York, NY: John Wiley & Sons, Inc., 1987), 322-324 and Roger D. Blair and David L. Kaserman, Antitrust Economics (Homewood, IL: Richard D. Irwin, Inc., 1985), 216-218 for analyses of the dominant firm market structure and monopoly power.

[14]Since it is not unusual to observe the dominant firm market structure, it is important to recognize the dominant firm as a distinct and separate market structure in evaluations of market power. It will be demonstrated in the section "Implications for Antitrust Enforcement" of this essay how this market structure affects the proper evaluation of market power.

is assumed that there is a purchaser of oranges that possesses buying power--the dominant firm. In addition, there is a group of competitive fringe firms, whose demand for oranges the dominant firm takes as given.

The dominant firm's purchasing decision is represented in Figure 4-4 below. Since the dominant firm must take into account the competitive fringe's purchases, its purchasing decision is based on its residual supply curve.[15] The dominant firm then maximizes profits by equating its marginal input cost of oranges with its value of the
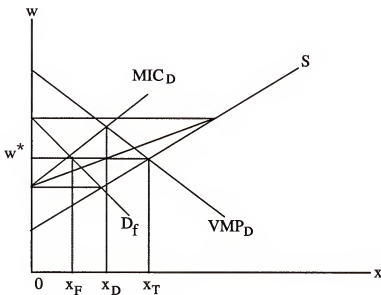

Figure 4-4
The Dominant Firm and Monopsony

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[15]The residual supply curve is obtained by subtracting the competitive fringe's demand curve, D_f, from the industry supply curve.

marginal product of oranges. At this point, the dominant firm will purchase x_D oranges at a price of w^*. The competitive fringe takes w^* as given and purchases x_F oranges. The total amount of oranges purchased is represented by x_T. It is clear from figure 4-4 that there is a welfare loss resulting from the dominant firm's purchasing decisions. The competitive fringe, however, prevents this welfare loss from being as large as that resulting from pure monopsony.

Incorporation of Monopsony into Judicial Decision Making

The preceding section described both the structural condition of monopsony and its consequent effects on welfare. This section examines what role monopsony analysis should play in judicial decision-making. An analogy to monopoly analysis is made with prescriptions for evaluating what constitutes anticompetitive behavior. Finally, the issue of how to evaluate firms, such as insurance companies, that act as purchasing agents for third parties is addressed.

Monopsony and Antitrust

The first issue to be addressed concerns what role, if any, monopsony analysis should play in the antitrust laws. Is it worthwhile to incorporate yet another economic concept into judicial reasoning? If the protection of competition and of consumer welfare are the key goals of antitrust, which arguably they are, then including the abuse of monopsony power as a violation of the antitrust laws is warranted.[16]

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[16]For a discussion of the goals of the antitrust laws, see Robert H. Bork, <u>The Antitrust Paradox: A Policy at War with Itself</u> (New York, NY: The Free Press, 1993), 50-89. For an overview of the literature regarding the goals of the antitrust

The detrimental effects to consumer welfare and the inefficient allocation of resources that arise due to the exercise of monopsony power were depicted in the previous section. Furthermore, the employment of monopsony power is not so rare that monopsony analysis would be rendered essentially useless in achieving the goals of the antitrust laws. References have, in fact, been made in some rulings to harmful monopsony power without analyses as formal as the one proposed here.[17] The mere fact that, in some rulings, the potential for anticompetitive harm due to buying power has been recognized is an encouraging sign that a formal analysis of monopsony power may be adopted.

Determination of Monopsonistic Abuses

If monopsony power is to come under scrutiny by the judiciary, then there needs to be some kind of standard for the evaluation of illegal monopsonization. The simplest and most logical approach is to employ tests parallel to those employed in the determination of illegal monopolization. Just as the structural condition of monopoly is not prohibited, neither should the structural condition of monopsony be

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laws, see E. Thomas Sullivan and Herbert Hovenkamp, Antitrust Law, Policy and Procedure: Cases, Materials, Problems, 2d ed. (Charlottesville, VA: The Michie Company, 1989), 1-23.

[17]For example, see Medical Arts Pharmacy of Stamford, Inc., v. Blue Cross & Blue Shield of Connecticut, Inc., 675 F.2d 502 (2d Cir. 1982): 507 and St. Bernard General Hospital, Inc. v. Hospital Service Association of New Orleans, Inc., 712 F.2d 978 (5th Cir. 1983): footnote 15, p. 987, which indicate that the employment of monopsony power may serve as a violation of the antitrust laws.

prohibited.[18] In <u>Grinnell</u>, the following standard for illegal monopolization was enunciated:

> (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historical accident.[19]

A similar proof could likewise serve as the standard for the determination of illegal monopsonization. The important components of such a proof include (1) identifying the relevant market, (2) determining the existence of monopsony power in that market, and (3) proving intent, i.e., did the firm obtain its monopsony power by means other than from achieving substantial efficiencies, superior business insight, or as a result of "historical accident."

Relevant market

The first task is to define the relevant market, which is composed of both a product market and a geographic market. Each of these components is discussed in turn. In addition, the importance of each component in evaluating anticompetitive harm is demonstrated.

Product market. In determining the relevant product market, it is necessary to evaluate what products are reasonably interchangeable with the product in question. In other words, it is not enough to simply identify those products that are physically

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[18]Both monopolies and monopsonies may result from or result in increased efficiency, which is desirable (as long as there are no offsetting anticompetitive effects).

[19]United States v. Grinnell Corp., 384 U.S. 563 (1966): 570-571.

similar. Reliance on physical similarity may be misleading. That is, physically similar products may be differentiated enough that they do not serve as suitable substitutes for one another. For example, second-hand durable equipment may not serve as a suitable substitute for new equipment, especially in industries that are undergoing rapid technological change. On the other hand, including only physically similar goods in the relevant product market may exclude products that do serve as reasonable substitutes. Perhaps the best example is provided by du Pont in which the government charged defendant manufacturer with monopolizing the cellophane market.[20] The Supreme Court defined the relevant product market as being composed of all flexible packaging materials, rather than just cellophane. In spite of the physical difference among these products (e.g., wax paper and Saran), they could be employed interchangeably for many purposes.

Evaluating the substitutability of products is not an easy task. One tool that is helpful in determining what products should be included in the relevant market is the cross-elasticity of demand between two products:

$$\theta = \frac{\partial Q_1}{\partial P_2} * \frac{P_2}{Q_1}. \tag{30}$$

That is, the cross-elasticity of demand measures how the quantity demanded of good 1 changes with a change in the price of good 2. Hence, it is important to include in the relevant market all products that have a high cross-elasticity of demand with the good in question. There is no economic principle, however, that draws the line at some

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[20]United States v. E. I. du Pont de Nemours & Co., 351 U.S. 377 (1956).

critical threshold for θ. Whenever the cross-elasticity of demand is greater than zero, the two goods appear to be substitutes, but including all goods with a cross-elasticity of demand greater than zero would surely be over-inclusive for antitrust purposes.

When evaluating the market power possessed by sellers, substitutability of products is examined from the perspective of buyers. It is logical, therefore, to take the viewpoint of suppliers in making relevant market determinations in cases dealing with purchasing power. In evaluating the relevant product market, it is necessary to determine the availability of alternative outlets for the supplier's product.

Geographic market. In evaluating the relevant market in cases concerning monopoly power, the judiciary has also taken into account geographical boundaries faced by firms. Recall from the discussion of the product market that to adequately assess purchasing power, the relevant market determination must be made from the viewpoint of suppliers.

A key factor in evaluating the geographic market is the ease with which a supplier can divert its sales from the local market to more distant markets. The ability of suppliers to sell in distant markets depends on such factors as transportation costs. If there are no substantial barriers to exporting the commodity out of the local market, then the potential for buying power to result in anticompetitive harm is diminished.

From the preceding discussion, it is apparent that the manner in which the relevant market is defined has important implications for the guilt or innocence of a firm. Clearly, narrower market definitions (often advocated by plaintiffs) lead to a

greater likelihood that the defendant will be found to possess market power. This is especially true given that the judiciary often places undue emphasis on market share. The more narrowly the market is defined, the greater the market share a firm will possess in that market. The effect that market definition has on the outcome of a case is illustrated by Judge Hand's ruling in the 1945 <u>Alcoa</u> case. In this case, three different market definitions were identified, resulting in three alternative measurements of market share: 33%, 64%, and over 90%. Judge Hand stated, "that [ninety] percentage is enough to constitute a monopoly; it is doubtful whether sixty or sixty-four per cent would be enough; and certainly thirty-three per cent is not."[21]

Buying power

Once the relevant market is determined, an assessment of the firm's buying power would follow in order to satisfy the first part of the proposed standard. Buying power will be defined as the degree to which a purchaser may deviate from the competitive solution by extracting reduced prices from suppliers. In decisions dealing with monopoly power, courts have often used market share as an indicator of market power. Courts run a risk, though, of making an incorrect ruling concerning a firm's market power by relying solely on market share as an indicator of market power.[22]

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[21]See United States v. Aluminum Co. of America, 148 F.2d 416 (2d Cir. 1945): 424.

[22]For a more comprehensive examination of buying power and the importance of not relying too heavily on market share, see notes 46-56 and accompanying text of this essay. In addition, see pp. 50-53 of this dissertation for a discussion of the inadequacy of market share as the sole indicator of monopoly power. Also, see William H. Landes and Richard A. Posner, "Market Power in Antitrust Cases," <u>Harvard Law Review</u> 94 (March 1981): 937-996. For the analogous analysis for

Hence, it is important that the judiciary take into account other important factors affecting market power, such as the elasticities of supply and demand. In examining monopsony power, evaluating the elasticity of supply involves determining the ability of the monopsonist's input suppliers to divert their production efforts to alternative outlets. An evaluation of the elasticity of demand in analyses of purchasing power involves determining the extent to which other users of the input alter their purchases of the input with changes in the price for the input.

Intent

Once a firm has been found to have monopsony power, the second part of the proposed standard involves an assessment of the firm's intent: this component is behavioral in nature. In efforts to judge intent in monopolization cases, the judiciary has tended to look at a firm's conduct and practices. Examining a firm's behavior is a sensible way of determining the existence of anticompetitive harm. This component of the standard, however, is not flawless. One danger inherent in this behavioral assessment is that it can be employed to condemn a firm's practices that are, in fact, not anticompetitive.[23] As a result, the intent component should be cautiously employed. Cautious employment includes a careful weighing of both the potential

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monopsony power, see Blair and Harrison, 51-54.

[23]See the discussion of intent on pp. 106-108 of this dissertation. In addition, see Frank H. Easterbrook, "On Identifying Exclusionary Conduct," Notre Dame Law Review 61(5) (1986): 972-980 for a discussion concerning the difficulty in distinguishing between behavior that is aggressively competitive versus exclusionary.

anticompetitive motives as well as the potential procompetitive justifications for any behavior in question.

Affected Parties

In the examination of illegal monopsonization, there are as many as three different parties who may suffer anticompetitive harm from monopsonistic practices. The first group is composed of suppliers who suffer the consequences of a restriction in quantity and a lower price paid to the input. Another group that may suffer anticompetitive harm is the competitors of the violating firm. Just as a monopolist may use its monopoly power to place its rivals at a competitive disadvantage, so may a monopsonist adversely affect its competitors. For example, a monopsonist may use its purchasing power to pressure its suppliers not to deal with a competitor or not to give a competitor price concessions.

The final potential victims of illegal monopsonization are consumers. As illustrated earlier, monopsonistic practices may lead to a reduction in consumer welfare. In fact, examining the effects of the purchaser's actions on final consumers may serve as a signal in determining intent and, hence, anticompetitive harm. For example, if the conduct in question results in consumers obtaining the final product at lower cost, then the actions undertaken by the alleged violator may have procompetitive justifications. On the other hand, if there are no such apparent benefits to consumers, then an efficiency rationale may not withstand judicial scrutiny.

Monopsony and the Health Insurance Industry

The health insurance industry provides an interesting application of monopsony analysis. The roles of the players are not as clear-cut as in many industries. There are three key players to consider: the health care providers (e.g., physicians and hospitals), the insurers, and the patients who are the actual consumers of health care. Several cases have come before the judiciary concerning allegations of anticompetitive conduct on the part of insurers.[24] The majority of the cases have been decided in favor of the defendants. It is contended here that if the judiciary had recognized the consequences of monopsony, more of the insurers would have been found in violation of the antitrust laws.

What makes these cases interesting from a policy perspective is the role of the insurers. Traditionally, insurers have served consumers in a risk-reduction capacity. By both pooling and bearing risk, insurance companies have helped to reduce the daily uncertainty faced by consumers. Health insurance companies have more recently served as purchasing agents of health care for the final consumer due to the emergence of managed care. Hence, a single insurance company may possess monopsony power due to its representation of a large number of subscribers. In cases

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[24]See, for example, Ball Memorial Hospital, Inc. v. Mutual Hospital Insurance, Inc., 784 F.2d 1327 (7th Cir. 1986); Brillhart v. Mutual Medical Insurance, Inc., 768 F.2d 196 (7th Cir. 1985); Kartell v. Blue Shield of Massachusetts, 749 F.2d 922 (1st Cir. 1984); Medical Arts Pharmacy of Stamford, Inc. v. Blue Cross & Blue Shield of Connecticut, Inc. 675 F.2d 502 (2d Cir. 1982); Michigan Association of Psychotherapy Clinics v. Blue Cross and Blue Shield of Michigan, 325 N.W.2d 471 (1982); St. Bernard General Hospital v. Hospital Service Association of New Orleans, Inc., 712 F.2d 978 (5th Cir. 1982); and Travelers Insurance Co. v. Blue Cross of Western Pennsylvania, 481 F.2d 8 (3rd Cir. 1973).

that deal only with the issue of using monopsony power to extract lower prices (versus cases dealing with practices that are exclusionary in nature), there exists a structural dilemma if parallel standards are drawn from the evaluation of illegal monopolization. In monopolization cases, a single firm that takes advantage of any monopoly power it has legally obtained simply to set prices above the competitive level is not judged to have violated the antitrust laws. If several firms collude, however, to restrict output and thereby increase price, then an antitrust violation has occurred. Symmetry demands that a similar standard should apply in the determination of illegal monopsonization.

Under such a standard, it appears that a single insurance company should have the right to employ any monopsony power it might have for the purpose of obtaining lower prices from health care providers.[25] But, if the subscribers to the insurance company all joined together instead and colluded, taking advantage of "power in numbers," in order to obtain lower prices, the collaborative action would constitute an antitrust violation. Therefore, the same result is treated differently under such a standard. Even if those same health care consumers formed a company to act as a purchaser, it is questionable whether such conduct would be free of any antitrust wrongdoing. Horizontal integration to exploit buying power is devoid of real efficiencies and would not pass a rule of reason inquiry. Such an inquiry would

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[25]See Ball Memorial, 784 F.2d 1327 (1986), and Kartell, 749 F.2d 922 (1984), for judicial opinions expressing this viewpoint.

examine whether unifying the patients' purchasing efforts produced efficiencies that outweighed any welfare-diminishing effects due to an increase in buying power.

Given the role of insurance companies as purchasing agents for consumers, it is sensible to set the same standard as would be set in the evaluation of a buying cooperative: weigh both efficiency-enhancing and welfare-decreasing effects. As mentioned earlier, one means of achieving a good assessment of whether firm conduct is anticompetitive is to determine how the final consumer is affected. The two analyses that follow highlight the important issues in evaluating health insurer conduct.

<center>Judicial Analyses</center>

Kartell v. Blue Shield of Massachusetts

Kartell, along with other plaintiff physicians, brought suit against Blue Shield, an insurer of physician services.[26] At issue in this case was Blue Shield's ban on a practice known as balance billing.[27] A ban on balance billing means that the insurer will reimburse a physician for his services only as long as the physician agrees not to

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[26]Kartell v. Blue Shield of Massachusetts, Inc., 749 F.2d 922 (1st Cir. 1984).

[27]See H. E. Frech III, "Monopoly in Health Insurance: The Economics of Kartell v. Blue Shield of Massachusetts" in H. E. Frech, ed., Health Care in America: The Political Economy of Hospitals and Health Insurance (San Francisco, CA: Pacific Research Institute for Public Policy, 1988), 293-322 for an analysis of the harmful effects resulting from this practice. Additionally, see Frances H. Miller, "Vertical Restraints and Powerful Health Insurers: Exclusionary Conduct Masquerading as Managed Care?," Law and Contemporary Problems 51(2) (Spring 1988): 220-224 for further analysis of the court's ruling in this case. Miller's article discusses the potential for dominant insurers to employ vertical restraints with anticompetitive consequences. Miller employs several cases concerning health insurers, such as Kartell, to illustrate deficiencies in judicial reasoning.

levy any additional charges on the patient. The physicians in this case alleged that this practice of Blue Shield's resulted in prices that were below those that would occur in a freely competitive market and, therefore, that the practice was anticompetitive.

The district court ruled in favor of the physicians. The district court's reasoning actually employs some monopsony analysis, although "monopsony" is not specifically mentioned. In its analysis, the court found Blue Shield to be a purchaser that possessed market power.[28] The district court felt that Blue Shield's market power and ban on balance billing resulted in prices that were too low.[29] Hence, the district court clearly had some sense that market power possessed by a buyer may have detrimental effects just as monopoly power may be harmful.

Not surprisingly, Blue Shield appealed. The appellate court, however, did not agree with the district court's finding: it did not believe Blue Shield's ban on balance billing to be an anticompetitive practice. Among the appellate court's reasons for its reversal of the lower court's ruling were (1) its perception of Blue Shield as a single purchaser of medical services and (2) the fact that reduced rather than increased prices were at issue.

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[28]The determination of market power was based on the court's finding that Blue Shield and Blue Cross (Blue Shield's counterpart for insuring hospital services) held 74% of the market of privately insured Massachusetts residents. Once again, a word of caution must be given about basing market power on market share alone.

[29]Kartell, 749 F.2d 922 (1984): 924.

The first issue concerns the manner in which the appellate court viewed Blue Shield. The appellate court felt that Blue Shield should be treated as a single purchaser of medical services. Consequently, it should be permitted to employ any monopsony power it might have to specify the conditions of its purchases. Furthermore, the appellate court argued that since Blue Shield is buying for a third party (the consumers) and acting as an agent on behalf of that party, it should be allowed to get the best terms that it can. Blue Shield, however, is not just negotiating for a single insured; rather, it uses the fact that it represents many insureds simultaneously to wield power over the providers of health care. If these same insureds were to unify themselves into a single group to bargain for better terms, their action would most likely be viewed as collusive and illegal, rather than as demonstrating skillful business expertise.

This issue gets at the structural dilemma discussed in the previous section. The dilemma is that two situations that differ only in structural composition (i.e., a single firm versus colluding firms) and that result in the same economic outcome (i.e., the exercise of market power to influence price) receive different treatment under the antitrust laws. This is the classic distinction without a difference. As previously mentioned, the case of insurance companies poses an interesting problem: how to treat firms that act as purchasing agents for a multitude of consumers. One way of treating such a firm is to simply view it as a single, independent firm, which is precisely the position that the appellate court took in this case.

The other extreme is to treat such a firm as created for the sole purpose of combining the buying power of individual purchasers. The appellate court, in fact, addressed the issue of such "sham" organizations and pointed out that there was no contention that Blue Shield represented such an organization.[30] It would indeed be extreme to argue that insurers were deserving of this latter type of treatment. It may not be unreasonable, however, to take an intermediate position in evaluating firms such as Blue Shield, examining both the potential for anticompetitive harm as well as for increased efficiency. Recall that such a method of evaluation was advocated in the preceding section.

The appellate court also intimated that since low prices were the concern rather than high prices, Blue Shield's ban on balance billing was not anticompetitive:

> First, the prices at issue here are low prices, not high prices. . . . the Congress that enacted the Sherman Act saw it as a way of protecting consumers against prices that were too <u>high</u>, not too low.[31]

As demonstrated earlier, low prices obtained at an intermediate stage can be detrimental to consumer welfare, especially since there is no reassurance that these lower prices will indeed be passed on to the final consumer. Judge Breyer, who authored the First Circuit's opinion, further stated,

> These facts suggest that courts at least should be cautious--reluctant to condemn too speedily--an arrangement that, on its face, appears to bring low price benefits to the consumer.[32]

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[30]Ibid., 925.

[31]Ibid., 931.

[32]Ibid.

The analysis presented earlier, however, indicates courts should also be cautious not to dismiss too quickly a practice that <u>appears</u> to decrease prices without actually confirming that there are indeed welfare-enhancing effects.

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<u>Ocean State Physicians Health Plan, Inc. v. Blue Cross &
Blue Shield of Rhode Island</u>

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<u>Ocean State</u>[33] is an excellent example of a case that deals with a most-favored-nation clause.[34] Ocean State is a health maintenance organization (HMO) in Rhode Island, and Blue Cross and Blue Shield of Rhode Island is a commercial insurer of health care. Ocean State applied for its license to operate as an HMO in Rhode Island in 1980. At that time, Blue Cross was the dominant insurer. In 1983, Ocean State implemented a discounting policy designed to promote cost containment by its contracting health care providers. Under this policy, 20% of the providers' fees were withheld. At the end of the year, the providers received this withholding as long as Ocean State's operational expenses were no greater than estimated. In 1984, providers received the withholding, but in 1985, the withholding was not paid out.

During its first few years as an HMO, Ocean State flourished, increasing its number of subscribers more than it had anticipated. Blue Cross, on the other hand,

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[33]Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield of Rhode Island, 692 F. Supp. 52 (D. R.I. 1988).

[34]Other cases that deal with most-favored-nation clauses include Madden v. California Dental Service, 1986-1 Trade Cases, 63,042-63,054; Michigan Association of Psychotherapy Clinics v. Blue Cross and Blue Shield of Michigan, 325 N.W.2d 471 (1982); Kitsap Physicians Service v. Washington Dental Service, 671 F. Supp. 1267 (W.D. Wash. 1987); and Reazin v. Blue Cross and Blue Shield of Kansas, Inc., 663 F. Supp. 1360 (D. Kan. 1987). <u>Reazin</u> was a rare case in that the judiciary acknowledged and condemned the harmful effects of most-favored-nation clauses.

lost subscribers and was financially distressed. In 1986, both Blue Cross and Ocean State faced some financial difficulty, and each developed new plans to deal with the financial situation it faced. Ocean State created Specialty Incentive Pools (SIPs). Under this plan, providers could potentially receive 100% as opposed to 80% of their fees from Ocean State. This plan, like the withholding plan described earlier, was conditioned upon Ocean State's financial well-being. Providers were split up into different specialty groups, each of which was given an operating budget. During the year, Ocean State paid providers 80% of their fees. At the end of the year, if a group's operational cost was within the estimated cost, then any remaining funds left in the pool were divided among the providers in that group.[35]

In order to deal with increased competition and its distressed financial state, Blue Cross implemented a three-part plan: (1) it created HealthMate, a plan resembling an HMO, (2) it employed an adverse selection policy as the basis for its pricing decisions, and (3) it enacted a "prudent buyer" policy. Because of the competitive preventive health care plans that had arisen, Blue Cross feared losing a large proportion of its healthiest subscribers to such plans. If such a loss were to occur, Blue Cross would then face increased costs per subscriber. As a result, the adverse selection policy was implemented.

Under the adverse selection policy, employers faced three different price levels for the traditional Blue Cross plan based on the menu of health plans offered: (1) the

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[35]In 1986, the physicians did not receive any additional reimbursement since Ocean State's costs exceeded those anticipated.

highest price level was charged to those employers who offered an HMO in addition to the traditional Blue Cross plan (but not HealthMate), (2) the middle price level was charged to those who offered the preceding plan plus HealthMate, and (3) the lowest price level was charged to those who only offered the traditional plan. Hence, this policy gave employers an incentive to remain with the traditional plan and not to switch to alternative financing organizations, such as Ocean State. Despite the fact that this was a tactic taken to discourage employers from dealing with other insurers, this is not the issue that was under much scrutiny by the court.

Blue Cross was aware of Ocean State's incentive plans and was concerned that providers were accepting discounted reimbursements for their services. As a result, Blue Cross implemented the prudent buyer policy, which is the practice that the court most thoroughly analyzed and evaluated. Under this policy, Blue Cross would not reimburse providers for any more than the amount received from other insurers. Blue Cross' justification for enacting the prudent buyer policy was that it wanted to receive as good a deal from providers as its competitors received. This policy is similar to most-favored-nation agreements among countries. Providers were required to present documentation that they were not accepting lower reimbursements for their services from competing insurers. If such documentation was not provided by the stated deadline, then Blue Cross automatically implemented a 20% reduction in the reimbursement amount. After the implementation of this policy, Ocean State lost approximately one third of its participating physicians. Ocean State attributed this loss to the prudent buyer policy. There was testimony by providers that they could

not afford the loss of revenues they would incur from a 20% reduction in Blue Cross

reimbursements. It is not clear that all of the physicians left Ocean State due to the

prudent buyer policy. It is apparent, however, that this policy did have an impact on

Ocean State. Ocean State's loss of participating physicians resulted in many of its

subscribers not being covered for care by their personal physicians. Hence, Ocean

State also lost over one quarter of its subscribers.

The district court in this case noted that there was no question that Blue Cross

had market power, but that the question concerned its use of this market power in an

anticompetitive manner. In examining the case, the district court stated,

> it would seem silly to argue that a policy to pay the same amount for the
> same services is anticompetitive, even on the part of one who has market
> power. This, it would seem, is what competition should be all about.[36]

In the American Medical Association's support of Ocean State, however, it is noted

that a most-favored-nation clause may actually have negative effects:

> the record in this case, which is consistent with economic theory, shows that
> the purpose and effect of the Blue Cross policy was precisely the opposite:
> the most favored nations clause discouraged discounting by physicians and
> instead raised the cost of Blue Cross' rivals, especially Ocean State.[37]

In a case such as this one, where the defendant clearly holds a dominant position in

the market, it is important to look beyond what appears to be obvious. That is, it

does indeed seem odd to make the argument that Blue Cross is acting

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[36]Ocean State, 692 F. Supp. 52 (1988): 71.

[37]Brief of the American Medical Association as <u>Amicus Curiae</u> in support of
Ocean State Physicians Health Plan, Inc. No. 89-1044 (October 1989): 4. In
addition, see Miller, 231-234, for a discussion of the exclusionary effects of Blue
Cross' prudent buyer policy.

anticompetitively by pursuing a policy that will allow it to pay the same rate for the same services that competing insurers pay. When all the factors are weighed, however, it may very well be possible that Blue Cross' prudent buyer policy should have been found to be anticompetitive.

First, Blue Cross' motive for enacting the prudent buyer policy should have had a bearing on the outcome of the case: did Blue Cross implement the policy because it truly was interested in cost containment, or was there an underlying motivation to drive competitors out of business (i.e., versus meeting competition)? Simply because lower costs appear to be the aim of a policy such as the prudent buyer policy, that does not mean that there is no anticompetitive goal in mind. For example, it is entirely possible that Blue Cross enacted this policy with the expectation that providers would leave Ocean State, which would have had the effect of decreasing the competition that Blue Cross faced without decreasing Blue Cross' costs.[38] Faced with less competition, Blue Cross would have had greater control over the premiums charged to consumers. Furthermore, it is important to note that Blue Cross did not pay the same price for the same services as compared to Ocean State. Recall that under Ocean State's plan, providers shared in risk, any discount received was

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[38]As mentioned previously, many providers did stop contracting with Ocean State. Since Ocean State's incentive plans (i.e., cost-containment measures, which included risk sharing) were part of the contract between Ocean State and providers, providers could not simply stop granting the so-called discounts to Ocean State. It is important to emphasize that providers were not granting outright discounts to Ocean State. Rather, they agreed to allow their reimbursement rates to vary with Ocean State's financial well-being.

contingent upon Ocean State's financial well-being, whereas the discounted
reimbursements imposed by Blue Cross were absolute.

There is evidence that Blue Cross did indeed have anticompetitive intent. One
such piece of evidence is that Blue Cross directed its prudent buyer policy primarily
toward providers dealing with Ocean State; it did not concern itself so much with
discounting by other insurers. It was even noted in the district court case that a Blue
Cross employee wrote, "not one guy in the state isn't going to know the implication
of signing with Ocean State."[39] Furthermore, unlike Ocean State, the Blue Cross
plan did not provide incentives for cost containment on the part of providers. If such
incentives had been incorporated into its plan, that would have served as an indicator
that Blue Cross had efficiency considerations in mind. Blue Cross' prudent buyer
policy, however, tended to have incentives that discouraged providers from dealing
with competing insurance companies, such as Ocean State, which had cost-
containment incentive plans.

The appellate court upheld the district court's ruling. In its ruling, the appellate
court stated,

> In the present case, Ocean State alleges that Blue Cross never actually passed
> along its savings to subscribers. But nothing turns on whether Blue Cross in
> fact lowered its rates. The fact remains that achieving lower costs is a
> legitimate business justification under the antitrust laws.[40]

This statement is incorrect. As demonstrated previously, attaining lower costs may be

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[39]Ocean State, 692 F.Supp. 52, 61.

[40]Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield of Rhode
Island, 883 F.2d 1101 (1st Cir. 1989): footnote 1 on p. 1111.

indicative of the illegal exercise of monopsony power. Hence, it does make a difference whether Blue Cross' premiums were reduced since such a reduction would help to demonstrate that the lower costs were the result of an effort to achieve greater efficiency, which, in turn, would benefit consumers. In addition, many arguments for such clauses as those enacted by Blue Cross have hinged on the proposition that by containing costs, consumers are saved a great deal of money. If these so-called cost savings are not passed on to consumers, then consumer welfare is not enhanced; the only party that benefits is the dominant insurer. Consequently, under a monopsony analysis, it is quite possible that achieving lower costs may not be a legitimate business justification.

Implications for Antitrust Enforcement

Recently, the Department of Justice and the Federal Trade Commission issued a joint statement detailing guidelines for antitrust enforcement in the health care industry. One topic that the statement deals with is joint purchasing arrangements among providers of health care.[41] While the statement does not address buying power as it pertains to health care insurers, it does lend insight into how antitrust enforcement officials view monopsony power and the extent to which the leverage of purchasing power will be scrutinized.

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[41]"Department of Justice and Federal Trade Commission Antitrust Enforcement Policy Statements in the Health Care Area," Antitrust Trade and Regulation Report 64(1631) (Washington, D.C.: The Bureau of National Affairs, Inc., September 16, 1993): S11-S14.

Safety Zones

In presenting guidelines for antitrust enforcement, the two agencies have created "safety zones," which provide boundaries within which firms can engage in certain activities (such as joint purchasing) and be relatively free from antitrust challenges. With respect to joint purchasing agreements among health care providers, the agreements generally will not be challenged if the following conditions are met:

> (1) the purchases account for less than 35 percent of the total sales of the purchased product or service in the relevant market; and (2) the cost of the products and services purchased jointly accounts for less than 20 percent of the total revenues from all products or services sold by each competing participant in the joint purchasing arrangement.[42]

These conditions are to insure against what the two agencies consider to be the two key potential anticompetitive harms of joint purchasing arrangements: (1) the use of purchasing power to obtain the desired goods or services at subcompetitive prices, and (2) the facilitation of price fixing in the output market by making costs so similar that rivals can easily agree upon price.

In general, the Department of Justice and the Federal Trade Commission are not terribly concerned about the potential for anticompetitive harm stemming from joint purchasing activities. The tone of their statement is that the agencies view such arrangements as tending toward greater efficiency. For example, joint purchasing agreements may serve to reduce transaction costs and may create more efficient dissemination of information. It is certainly true that joint purchasing arrangements often have the effect of increasing overall welfare. For example, Topco was a

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[42]Ibid., S-12.

purchasing cooperative composed of independent grocers. By unifying the purchases for and the distribution of products, the cooperative was able to gain efficiency in such areas as purchasing, packaging, and distribution.[43] It is important, however, not to be too quick to dismiss a joint purchasing agreement's potential for anticompetitive harm as it has been demonstrated in this essay that buying power can lead to decreased welfare.

It is encouraging that the Department of Justice and the Federal Trade Commission recognize that the exercise of buying power may be detrimental to competition and welfare. In the agencies' statement, they note that antitrust concerns may arise if "the arrangement accounts for so large a purchase that it can effectively exercise market power in the purchase of the product or service."[44] The statement correctly defines market power as "the power to drive down the price of goods or services being purchased below competitive levels."[45] Even though the statement never explicitly mentions "monopsony," it clearly recognizes the potential that purchasing power has for anticompetitive harm. This definition, however, runs the risk of failing to identify anticompetitive behavior that is not reflected in subcompetitive prices, such as various non-price exclusionary tactics. Additionally, I

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[43]Topco, however, was not free from antitrust scrutiny. The Government successfully challenged Topco's horizontal market division among its members as a violation of Section 1 of the Sherman Act. United States v. Topco Associates, 405 U.S. 596 (1972).

[44]"Department of Justice," S-12.

[45]Ibid., footnote 11.

contend that the guidelines set forth by the Department of Justice and the Federal Trade Commission are inadequate to identify and discourage anticompetitive behavior.

There are a couple of major criticisms that can be made regarding the safety zones established by the two agencies. The first concerns the emphasis on market share as a measure of market power. Recall from the statement that purchasing agreements would generally be free from antitrust scrutiny if the market share (of purchases made by the parties to the agreement) was less than 35%. Market share alone, however, may result in incorrect conclusions regarding a firm's market power. The following discussion of buying power demonstrates why this is true.

The Buying Power Index

Blair and Harrison[46] have developed a Buying Power Index (BPI) that is analogous to the Lerner Index.[47] Since the value of the marginal product of the input and the price paid to the input are equal under competition, the Buying Power Index measures a firm's monopsony power by evaluating the percentage deviation between the two:

$$BPI = \frac{VMP - w}{w}. \tag{31}$$

An alternative representation of the Buying Power Index is

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[46]Blair and Harrison, 47-61.

[47]The Lerner Index measures monopoly power by evaluating the percentage deviation between a seller's price and marginal cost.

$$\text{BPI} = \frac{1}{e} \tag{32}$$

where ϵ is the elasticity of supply.[48] The elasticity of supply in this case refers to that of input suppliers to the monopsonist. It is apparent that $\partial \text{BPI}/\partial \epsilon < 0$. The intuition is straightforward: the easier it is for suppliers to divert their production efforts to other industries, the less leverage a monopsonist has in gaining price concessions.

Just as it is rare to observe a pure monopoly, one is unlikely to find pure monopsony very often. It is not so rare, however, to find industries that have dominant or colluding purchasers. Analogous to the Lerner Index for a market structure characterized by a dominant firm with a competitive fringe, Blair and Harrison have developed a Buying Power Index that measures monopsony power held by a dominant purchaser:

$$\text{BPI} = \frac{S}{e + \eta(1-S)} \tag{33}$$

where S represents the market share of the dominant buyer, ϵ once again represents the elasticity of supply, and η represents the elasticity of demand of the purchasing fringe.[49] The implications of the elasticity of supply for a firm's monopsony power remain the same as in equation (32).

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[48]The derivation of equation (32) is given in Appendix 3.

[49]The derivation of equation (33) is given in Appendix 4.

We now have two additional variables to consider: (1) the market share of the dominant firm and (2) the elasticity of demand of the competitive fringe. It is not difficult to ascertain from equation (33) that $\partial BPI/\partial S > 0$, which indicates that as the market share of the dominant firm increases, so does its ability to extract lower prices, ceteris paribus. The larger the market share, the smaller the restriction on output needed to bring about a reduction in price. Also from equation (33), we can determine that $\partial BPI/\partial \eta < 0$, which indicates that as the elasticity of demand of the competitive fringe increases, the more difficult it is for the dominant firm to obtain subcompetitive prices from its suppliers. The more responsive the purchasing fringe is to changes in price, the less effect the dominant firm has on price. With a relatively high elasticity of demand, a reduction in price will draw additional purchases from the competitive fringe, counteracting the effect of the monopsonist's decrease in the quantity purchased.

The judiciary traditionally has focused on market share as an indicator of market power. For example, in Barry v. Blue Cross of California, the Ninth Circuit stated,

> To prevail on this [monopolization of the medical insurance market in violation of section 2 of the Sherman Act] claim, they must establish that Blue Cross has a sufficiently large share of a relevant market. . . . Blue Cross insured sixteen percent of the remaining patients. Such a market share is far below what we would require for a monopoly.[50]

A similar example is found in Kitsap Physicians Service v. Washington Dental

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[50]Barry v. Blue Cross of California, 805 F.2d 866 (9th Cir. 1986): 874.

Service[51] In this case Judge Dimmick states, "A 13% market share (or even a 22%
share, excluding the commercial insurers) is not enough market power to give rise to
a prima facie case of dangerous probability of success of monopolization."[52] These
statements clearly indicate that judges believe that there is a threshold value for
market share at which a court should begin to be concerned with the possibility of
market power. Although, these market shares are not enormous, it will be shown that
setting such a threshold can lead to incorrect conclusions concerning a firm's market
power (i.e., firms with seemingly small market shares may, in fact, possess market
power and vice versa).

   Market share does indeed play an important role in the determination of
monopoly or monopsony power. From equation (33), it is apparent, however, that
relying solely on market share may lead to incorrect conclusions regarding a firm's
monopoly or monopsony power. Clearly, the elasticities of supply and of fringe
demand must be taken into account.[53]

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[51]Kitsap Physicians Service v. Washington Dental Service, 671 F. Supp. 1267
(W.D. Wash. 1987).

[52]Ibid., 1270.

[53]In his ruling in Ocean State, Judge Boyle stated, "In unregulated industries,
courts measure market power by defining the relevant product and geographic market
and compute the defendant's market share." He additionally states, "In a regulated
industry, a heavy reliance on market share statistics probably would be an inaccurate
or misleading indication of monopoly power. . . . Other factors such as size of
competitors, degree of barriers to entry, pricing trends and practices and technological
superiority may be considered in determining market power." 692 F. Supp. 52 (D.
R.I. 1988): 68-69. It is encouraging that Judge Boyle acknowledges the importance
of other factors in evaluating market power. It is unfortunate, however, that he does
not consider them sufficiently significant to be incorporated into analyses concerning
market power in industries that are not regulated.

Even though exact measurement of elasticity is difficult, it is important to at least make serious inquiries regarding the extent to which suppliers have alternative outlets for their output and how readily the competitive fringe firms may increase their purchases in response to reductions in price if one is to evaluate the buying power of a firm. Hence, the safety zones set forth by the agencies may not adequately identify harm to competition. For example, suppose a firm has a market share of 25% of the purchases in an industry, which places it in the safety zone. If the elasticity of supply is .5 and the elasticity of demand is .5, then the resulting buying power index is 0.29,[54] which means that a purchaser can extract a price concession on inputs that is up to 29% lower than the competitive price. On the other hand, suppose a firm has a 45% market share, which puts it outside the safety zone, but faces elasticities of supply and demand that are each equal to 2. In this case, the Buying Power Index is only 0.15.[55] In fact, for a firm facing these high elasticities, to be able to get a 29% reduction in price, it must actually possess approximately 73% of the market.[56]

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[54]The calculation of the buying power index is

$$BPI = \frac{.25}{.5+.5(.75)} \approx 0.29.$$

[55]The calculation of the buying power index is

$$BPI = \frac{.45}{2+2(.55)} \approx 0.15.$$

[56]The 73% is obtained from the following calculation:

$$\frac{x}{2+2(1-x)} = 0.29.$$

Solving for x, 0.73 is obtained.

Hence, market share alone does not necessarily give a clear picture of a firm's market power. Even low market shares may be misleading. As a result, setting a 35% threshold at which conduct will be evaluated may lead to some anticompetitive behavior being ignored.

Monopsony Power and Anticompetitive Harm

The second major criticism of the joint statement issued by the Department of Justice and the Federal Trade Commission is that its tone reflects a belief that monopsony power is not much of a threat to the competitive process. The case analyses above, however, demonstrate that anticompetitive harm may very well result from the exercise of purchasing power. Not only may competing purchasers be harmed due to exclusionary tactics by a dominant purchaser, but consumers may also be harmed. Recall from the economic analysis of monopsony that lower prices obtained by a purchaser do not necessarily translate into lower prices for consumers. Consumers only benefit from lower prices obtained for an input if those lower prices are the result of increased efficiency, not from increased purchasing power. It is important, therefore, that guidelines be set up that treat monopsony power with the same degree of concern with which monopoly power is treated. That is, it is necessary to weigh both anticompetitive harm resulting from a dominant buyer as well as any procompetitive justifications there may be.

Conclusion

As demonstrated by the preceding analyses, health insurers may be using the leveraging power they possess from having a large number of subscribers to behave

anticompetitively. It is important for the sake of overall efficiency and welfare that the market structure of monopsony and its resulting welfare effects be recognized. The judiciary should make an effort toward incorporating monopsony analysis into its evaluation of cases dealing with purchasing power.

Naturally, there is a great wealth of research yet to be done in this area. Suggestions for future research include (1) further examinations as to how to best incorporate monopsony analysis into judicial decision making, (2) further investigation as to how to best deal with purchasing agents such as insurance companies, and (3) the implications of monopsony for the various current health care reform proposals.

CONCLUSIONS

The preceding three essays analyzed issues that are currently relevant in antitrust judicial decision making. This is of great significance since the manner in which these issues are dealt with by the judiciary affects industry as well as consumers. Each essay contains economic analyses of antitrust issues, such as illegal tying, illegal monopolization, and illegal monopsonization, in the context of specific judicial decisions. Flaws concerning improper economic reasoning in these decisions have been pointed out, and suggestions have been made for improving judicial decision making so that efficiency and consumer welfare will be enhanced.

The first essay demonstrates how employing a life-cycle pricing model in the analyses of the recent claims of illegal tying and illegal monopolization brought against manufacturers of high-technology, durable goods results in a more accurate assessment of anticompetitive harm. A key conclusion obtained from applying a life-cycle approach to these judicial analyses is that the judiciary should be concerned primarily with the nature of competition in the initial market for the sale of the durable rather than the nature of competition in an aftermarket. Another key conclusion is that independent maintainers who choose to service a particular brand of durable lack sufficient grounds for an antitrust complaint when they find themselves

foreclosed from providing maintenance and repair services due to the manufacturer's legal control over its repair parts.

The second essay addresses a classic example of illegal monopolization: the United Shoe Machinery case. In this essay, the judicial condemnation of United's leasing system is analyzed for the purpose of evaluating the reasonableness of the district court's decisions. The economic analysis results in the finding that United's leasing practices were not anticompetitive; rather, there were procompetitive justifications for virtually all of them. The major conclusions from this analysis are (1) the behavioral component of the proof for illegal monopolization is defined too loosely and (2) the court was not concerned so much with United's behavior as it was with United's large size. A key concern with this decision, which has such strong precedent power, is that it will discourage firms that possess a relatively large market share from exhibiting normal competitive behavior and from pursuing efficiency-enhancing endeavors that may further increase market share for fear of being subject to antitrust prosecution.

The last essay examines illegal monopsonization in the context of the health insurance industry. The concept of illegal monopsonization is employed in order to determine whether the judiciary has failed to identify anticompetitive behavior on the part of health insurers in various lower court decisions. The analyses contained within this essay do indeed result in the conclusion that some large insurers have employed monopsony power for anticompetitive purposes and that the judiciary has not adequately identified monopsony power as a threat to the competitive process.

Furthermore, the analyses indicate that care should be taken in evaluating the benefits from joint purchasing arrangements since they could result in a disproportionate amount of market power in the hands of purchasers, ultimately leading to reduced efficiency and consumer welfare.

It is clear that the issues addressed in each essay have important ramifications for overall efficiency, the competitive process, and consumer welfare. It is essential that great care be taken in assessing whether anticompetitive harm has occurred. These essays are intended to (1) encourage critical thinking about difficult issues that have significant bearing on social welfare and (2) to stimulate a change in the way the judiciary deals with these issues.

APPENDIX 1
THE LERNER INDEX

It is a relatively easy mathematical manipulation to transform the Lerner index as an expression in terms of a price-cost mark-up ratio to one in terms of the price elasticity of demand. The original expression was

$$\lambda = \frac{P-MC}{P}.$$

Since a monopolist chooses the output at which its marginal cost equals its marginal revenue, marginal revenue may be substituted into the equation:

$$\lambda = \frac{P-MR}{P}.$$

Marginal revenue is defined as

$$MR = P + Q\frac{\partial P}{\partial Q}.$$

Rewriting the marginal revenue expression yields

$$MR = P[1 + \frac{Q}{P}\frac{\partial P}{\partial Q}].$$

By the definition of demand elasticity, we may write

$$MR = P[1 - \frac{1}{\eta}].$$

Substituting into the expression for λ and rearranging yields

$$\lambda = \frac{P - MR}{P} = \frac{P - P(1 - \frac{1}{\eta})}{P}$$

$$= 1 - 1 + \frac{1}{\eta}$$

$$= \frac{1}{\eta}$$

which is the expression in the text.

THE LERNER INDEX FOR A DOMINANT FIRM

The Lerner index may also be used to express market power for a dominant firm. This involves a market structure where there is one firm that dominates the market, yet there exist other competing firms, known as the "competitive fringe."

The following notation will be used in this derivation:

$Q_{CF}(P)$ = the quantity supplied by the competitive fringe

$Q_{DF}(P)$ = the quantity supplied by the dominant firm

$Q_{M}(P)$ = the quantity supplied by the market

Hence, $Q_{DF} = Q_M - Q_{CF}$.

As a result, the following holds true:

$$\frac{\partial Q_{DF}}{\partial P} = \frac{\partial Q_M}{\partial P} - \frac{\partial Q_{CF}}{\partial P}.$$

Next, if the above equation is multiplied by $-P/Q_{DF}$, the following is obtained:

$$-\frac{\partial Q_{DF}}{\partial P}*\frac{P}{Q_{DF}} = -\frac{\partial Q_M}{\partial P}*\frac{P}{Q_{DF}} + \frac{\partial Q_{CF}}{\partial P}*\frac{P}{Q_{DF}}.$$

A simple algebraic manipulation results in:

$$-\frac{\partial Q_{DF}}{\partial P}*\frac{P}{Q_{DF}} = -\frac{\partial Q_M}{\partial P}*\frac{P}{Q_{DF}}*\frac{Q_M}{Q_M} + \frac{\partial Q_{CF}}{\partial P}*\frac{P}{Q_{DF}}*\frac{Q_{CF}}{Q_{CF}}.$$

Substitution yields

$$\eta_{DF} = \eta_M \frac{Q_M}{Q_{DF}} + \epsilon_{CF} \frac{Q_{CF}}{Q_{DF}}$$

where the η_{DF} represents the elasticity of demand facing the dominant firm, η_M represents the elasticity of demand for the market, and ϵ_{CF} represents elasticity of the competitive fringe supply. Since the Lerner index for a dominant firm is

$$\lambda = \frac{1}{\eta_{DF}}$$

under the assumption of profit maximization, then substitution results in

$$\lambda = \frac{1}{\eta \frac{Q_M}{Q_{DF}} + \epsilon_{CF} \frac{Q_{CF}}{Q_{DF}}}.$$

Let S represent the share of total sales by the dominant firm. This yields:

$$\frac{Q_M(P)}{Q_{DF}(P)} = \frac{1}{S}$$

and

$$\frac{Q_{CF}(P)}{Q_{DF}(P)} = \frac{(1-S)}{S}.$$

One final substitution results in the Lerner index expressed in terms of the dominant firm's market share and in demand and supply elasticities:

$$\lambda = \frac{S}{\eta + \epsilon_{CF}(1-S)},$$

which is the expression in the text.

THE BUYING POWER INDEX

The transformation of the Buying Power Index from an expression in terms of percentage deviation between the value of the marginal product of the input and the price paid to the input to one in terms of the elasticity of supply is a relatively simple one. The initial expression was

$$BPI = \frac{VMP - w}{w}.$$

Since the monopsonist equates the value of the marginal product with the marginal input cost for optimization, marginal input cost may be substituted into the equation:

$$BPI = \frac{MIC - w}{w}.$$

Marginal input cost, however, is

$$w(x) + x * \frac{dw(x)}{dx}.$$

An alternative representation of marginal input cost is

$$MIC = w(x) \left[1 + \frac{x}{w(x)} \frac{dw(x)}{dx} \right].$$

The definition of supply elasticity allow marginal input cost to be written as

$$\text{MIC} = w(x)\left[1+\frac{1}{\epsilon}\right].$$

Substitution into the expression for the BPI yields

$$\text{BPI} = \frac{\text{MIC}-w}{w} = \frac{w\left[1+\frac{1}{\epsilon}\right]-w}{w}$$

$$= 1 + \frac{1}{\epsilon} - 1$$

$$= \frac{1}{\epsilon}$$

which is the expression in the text.

APPENDIX 4
THE BUYING POWER INDEX FOR A DOMINANT FIRM

The Buying Power Index can also be used to represent purchasing power held by a dominant firm. In this case, there is one firm that dominates the market, which faces competition due to the existence of a competitive fringe.

The following notation will be used in this derivation:

x_{cf} = the quantity of purchases of the input made by the competitive fringe

x_{df} = the quantity of purchases of the input made by the dominant firm

x_t = the total quantity purchased of the input

Hence, $x_{df} = x_m - x_{cf}$.

Therefore, the following must be true:

$$\frac{dx_{df}}{dw} = \frac{dx_m}{dw} - \frac{dx_{cf}}{dw}.$$

Multiplying the above equation by w/x_{df} yields

$$\frac{dx_{df}}{dw} * \frac{w}{x_{df}} = \frac{dx_m}{dw} * \frac{w}{x_{df}} - \frac{dx_{cf}}{dw} * \frac{w}{x_{df}}.$$

Algebraic manipulation results in:

$$\frac{dx_{df}}{dw} * \frac{w}{x_{df}} = \frac{dx_m}{dw} * \frac{w}{x_{df}} * \frac{x_m}{x_m} - \frac{dx_{cf}}{dw} * \frac{w}{x_{df}} * \frac{x_{cf}}{x_{cf}}.$$

By the definitions of the elasticities of supply and demand, we obtain

$$\epsilon_{df} = \epsilon_m \frac{x_m}{x_{df}} + \eta_{cf} \frac{x_{cf}}{x_{df}}$$

where ϵ_{df} represents the elasticity of supply facing the dominant firm, ϵ_m represents the elasticity of supply for the market, and η_{cf} represents the elasticity of demand for the competitive fringe. Under the assumption of profit maximization, the Buying Power Index for a dominant firm is

$$BPI = \frac{1}{\epsilon_{df}}.$$

Substitution, therefore, results in

$$BPI = \frac{1}{\epsilon_m \frac{x_m}{x_{df}} + \eta_{cf} \frac{x_{cf}}{x_{df}}}.$$

Let S represent the share of total purchases made by the dominant firm, which yields

$$\frac{x_m}{x_{df}} = \frac{1}{S}$$

and

$$\frac{x_{cf}}{x_{df}} = \frac{(1-S)}{S}.$$

Substitution results in the Buying Power Index expressed in terms of the dominant firm's market share of purchases and the elasticities of supply and demand,

$$BPI = \frac{S}{\epsilon_m + \eta_{cf}(1-S)},$$

which is the expression in the text.

REFERENCES

Anderson, William R. and C. Paul Rogers III. <u>Antitrust Law: Policy and Practice</u>. New York, NY: Matthew Bender & Company, Inc., 1985.

Areeda, Phillip E. <u>Antitrust Law</u>. Vol. IX. Boston, MA: Little, Brown and Company, 1991.

Areeda, Phillip E. and Louis Kaplow. <u>Antitrust Analysis: Problems, Text, Cases</u>. Boston, MA: Little, Brown and Company, 1988.

Aspen Skiing Co. v. Aspen Highland Skiing, 472 U.S. 585 (1985).

Ball Memorial Hospital, Inc. v. Mutual Hospital Insurance, Inc., 784 F.2d 1327 (7th Cir. 1986).

Barry v. Blue Cross of California, 805 F.2d 866 (9th Cir. 1986).

Blair, Roger D. and Jeffrey L. Harrison. <u>Monopsony</u>. Princeton, NJ: Princeton University Press, 1993.

Blair, Roger D. and David L. Kaserman. <u>Antitrust Economics</u>. Homewood, IL: Richard D. Irwin, 1985.

Blair, Roger D. and Lawrence W. Kenny. <u>Microeconomics with Business Applications</u>. New York, NY: John Wiley & Sons, Inc., 1987.

Bork, Robert H. <u>The Antitrust Paradox: A Policy at War with Itself</u>. New York, NY: The Free Press, 1993.

Brealey, Richard and Stewart Myers. <u>Principles of Corporate Finance</u>. New York, NY: McGraw-Hill Book Company, 1981.

Brief of the American Medical Association as <u>Amicus Curiae</u> in support of Ocean State Physicians Health Plan, Inc. No. 89-1044 (October 1989).

Brillhart v. Mutual Medical Insurance, Inc., 768 F.2d 196 (7th Cir. 1985).

Brodley, Joseph F. and Ching-to Ma. "Contract Penalties, Monopolizing Strategies, and Antitrust Policy." Stanford Law Review 15(5) (May 1993): 1161-1213.

Brown Shoe Co. v. United States, 370 U.S. 294 (1962).

Coase, Ronald H. "Durability and Monopoly." The Journal of Law and Economics 15(1) (April 1972): 143-149.

Datagate, Inc. v. Hewlett-Packard Co., 672 F. Supp. 1288 (N. D. Cal. 1987).

DeAngelo, Linda E. "Auditor Independence, 'Low Balling,' and Disclosure Regulation." Journal of Accounting and Economics 3 (1981): 113-127.

"Department of Justice and Federal Trade Commission Antitrust Enforcement Policy Statements in the Health Care Area." Antitrust Trade and Regulation Report 64(1631) Washington, D.C.: The Bureau of National Affairs, Inc., September 16, 1993.

Easterbrook, Frank H. "On Identifying Exclusionary Conduct." Notre Dame Law Review 61(5) (1986): 972-980.

Eastman Kodak Co. v. Image Technical Services, Inc., 112 S.Ct. 2072 (1992).

Federal Civil Judicial Procedure and Rules. St. Paul, MN: West Publishing Co., 1991.

Fisher, Franklin M. "Diagnosing Monopoly." Quarterly Review of Economics and Business 1(2) (Summer 1979): 18-33.

Fisher, Franklin M. "The Misuse of Accounting Rates of Return: Reply." American Economic Review 74(3) (June 1984): 509-517.

Fisher, Franklin M. and John J. McGowan. "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits." American Economic Review 73(1) (March 1983): 82-97.

Flath, David. "The Economics of Short-Term Leasing." Economic Inquiry 18(2) (April 1980): 247-259.

Fox, Eleanor M. and Lawrence A. Sullivan. Antitrust. St. Paul, MN: West Publishing Co., 1989.

Frech, H. E. III. "Monopoly in Health Insurance: The Economics of <u>Kartell v. Blue Shield of Massachusetts.</u>" In <u>Health Care in America: The Political Economy of Hospitals and Health Insurance</u>, ed. H. E. Frech, 293-322. San Francisco, CA: Pacific Research Institute for Public Policy, 1988.

Gaskins, Darius W., Jr. "Alcoa Revisited: The Welfare Implications of a Secondhand Market." <u>Journal of Economic Theory</u> 7(3) (March 1974): 254-271.

Greer, Douglas F. <u>Business, Government, and Society</u>. 3d ed. New York, NY: Macmillan Publishing Company, 1993.

Handler, Milton, Harlan M. Blake, Robert Pitofsky, and Harvey J. Goldschmid. <u>Trade Regulation</u>. 2d ed. Mineola, NY: The Foundation Press, Inc., 1983.

Hay, George A. "Is the Glass Half-Empty or Half-Full?: Reflections on the <u>Kodak</u> Case." <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 177-191.

Henderson, James M. and Richard E. Quandt. <u>Microeconomic Theory: A Mathematical Approach</u>. 3d ed. New York, NY: McGraw-Hill Book Company, 1980.

Hovenkamp, Herbert. "Market Power in Aftermarkets: Antitrust Policy and the <u>Kodak</u> Case." <u>UCLA Law Review</u> (August 1993): 1447-1459.

HyPoint Technology, Inc. v. Hewlett-Packard Co., 684 F. Supp. 488 (N.D. Ohio 1988).

HyPoint Technology, Inc. v. Hewlett-Packard Co., 869 F.2d 1491 (1989).

HyPoint Technology, Inc. v. Hewlett-Packard Co., 1990 WL 107523 (N.D. Ohio).

Image Technical Services, Inc. v. Eastman Kodak Co., 903 F.2d 612 (1990).

Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2 (1984).

Johnson, Robert W. and Wilbur G. Lewellen. "Analysis of the Lease-or-Buy Decision." <u>The Journal of Finance</u> 27(4) (September 1972): 815-823.

Kartell v. Blue Shield of Massachusetts, Inc., 749 F.2d 922 (1st Cir. 1984).

Kattan, Joseph. "Market Power in the Presence of an Installed Base." <u>Antitrust Law Journal</u> 62(1) (Summer 1993): 1-21.

Katz, Ronald S. "Legal Issues Between Equipment Manufacturers and Maintainers of That Equipment." International Computer Law Adviser (June 1989): 16-19.

Kaysen, Carl. United States v. United Shoe Machinery Corporation: An Economic Analysis of an Anti-Trust Case. Cambridge, MA: Harvard University Press, 1956.

Kitsap Physicians Service v. Washington Dental Service, 671 F. Supp. 1267 (W.D. Wash. 1987).

Lande, Robert H. "Chicago Takes it on the Chin: Imperfect Information Could Play a Crucial Role in the Post-Kodak World." Antitrust Law Journal 62(1) (Summer 1993): 193-202.

Landes, William M. and Richard A. Posner. "Market Power in Antitrust Cases." Harvard Law Review 94 (March 1981): 937-996.

Levy, Haim and Marshall Sarnat. Capital Investment and Financial Decisions. Englewood Cliffs, NJ: Prentice-Hall International, Inc., 1978.

Madden v. California Dental Service 1986-1 Trade Cases, 63,042-63,054.

Masten, Scott E. and Edward A. Snyder. "The Design and Duration of Contracts: Strategic and Efficiency Considerations." Law and Contemporary Problems 52(1) (Winter 1989): 63-85.

Masten, Scott E. and Edward A. Snyder. "United States versus United Shoe Machinery Coporation: On the Merits." Journal of Law and Economics 36 (April 1993): 33-70.

Medical Arts Pharmacy of Stamford, Inc., v. Blue Cross & Blue Shield of Connecticut, Inc., 675 F.2d 502 (2d Cir. 1982).

Michigan Association of Psychotherapy Clinics v. Blue Cross and Blue Shield of Michigan, 325 N.W.2d 471 (1982).

Miller, Frances H. "Vertical Restraints and Powerful Health Insurers: Exclusionary Conduct Masquerading as Managed Care?." Law and Contemporary Problems 51(2) (Spring 1988): 220-224.

Miller, Merton H. and Charles W. Upton. "Leasing, Buying, and the Cost of Capital Services." The Journal of Finance 31(3) (June 1976): 761-786.

Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield of Rhode Island, 692 F. Supp. 52 (D. R.I. 1988).

Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield of Rhode Island, 883 F.2d 1101 (1st Cir. 1989).

Posner, Richard A. "Exclusionary Practices and the Antitrust Laws." The University of Chicago Law Review 41(3) (Spring 1973): 506-535.

Posner, Richard A. and Frank H. Easterbrook. Antitrust: Cases, Economic Notes, and Other Materials. 2d ed. St. Paul, MN: West Publishing Co., 1981.

Reazin v. Blue Cross and Blue Shield of Kansas, Inc., 663 F. Supp. 1360 (D. Kan. 1987).

St. Bernard General Hospital, Inc. v. Hospital Service Association of New Orleans, Inc., 712 F.2d 978 (5th Cir. 1983).

Scherer, F. M. Industrial Market Structure and Economic Performance. Boston, MA: Houghton Mifflin Company, 1980.

Sieper, E., and Peter L. Swan. "Monopoly and Competition in the Market for Durable Goods." Review of Economic Studies 40(3) (1973): 333-352.

Spivack, Gordon B. and Carolyn T. Ellis. "Kodak: Enlightened Antitrust Analysis and Traditional Tying Law." Antitrust Law Journal 62(1) (Summer 1993): 203-216.

Su, Teddy T. "Durability of Consumption Goods Reconsidered." American Economic Review 65(1) (1975): 148-157.

Sullivan, E. Thomas, and Herbert Hovenkamp. Antitrust Law, Policy and Procedure. 2d ed. Charlottesville, VA: The Michie Company, 1989.

Swan, Peter L. "Durability of Consumption Goods." American Economic Review 60(5) (1970): 884-894.

Tirole, Jean. The Theory of Industrial Organization. Cambridge, MA: The MIT Press, 1988.

Travelers Insurance Co. v. Blue Cross of Western Pennsylvania, 481 F.2d 8 (3rd Cir. 1973).

United States v. Aluminum Co. of America, 148 F.2d 416 (2d Cir. 1945).

United States v. E. I. du Pont de Nemours & Co., 351 U.S. 377 (1956).

United States v. Grinnell Corp., 384 U.S. 563 (1966).

United States v. Topco Associates, 405 U.S. 596 (1972).

United States v. United Shoe Machinery Company of New Jersey Et Al., 247 U.S. 32 (1917).

United States v. United Shoe Machinery Corp., 110 F. Supp. 295 (D. Mass. 1953).

United States v. United Shoe Machinery Corporation, 266 F. Supp. 328 (1967).

United States v. United Shoe Machinery Corporation, 391 U.S. 244 (1967).

Vancil, Richard F. "Lease or Borrow--New Method of Analysis." Harvard Business Review 39 (September 1961): 122-136.

Varian, Hal R. Microeconomic Analysis. 2d ed. New York, NY: W. W. Norton & Company, Inc., 1984.

Virtual Maintenance, Inc. v. Prime Computer, Inc., 957 F.2d 1318 (6th Cir. 1992).

Viscusi, W. Kip, John M. Vernon, and Joseph E. Harrington, Jr. Economics of Regulation and Antitrust. Lexington, MA: D.C. Heath and Company, 1992.

Wiley, John Shepard, Jr., Eric Rasmusen, and J. Mark Ramseyer. "The Leasing Monopolist." UCLA Law Review 37 (April 1990): 693-731.

Worcester, Dean A. "Why 'Dominant Firms' Decline." The Journal of Political Economy 64(4) (August 1957): 338-346.
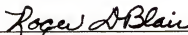
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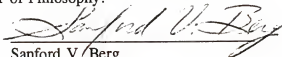
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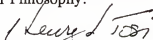
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